NOVEMBER 16, 1953

Fast Paper Work Moves Cars . . . p. 85

RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century

"CONSIDERABLE SAVINGS" with CAT* Railroad Diesels

Two powerful Caterpillar D17000 Railroad Diesels power this 44-tonner owned by Nelson & Albemarle Railway Co. It's one of the more than 90% of the 44-tonners in use on Class I, II, and III railroads that rely on dependable Caterpillar Engines.

C. C. Rothwell, general manager of the N & A, makes it easy to understand this overwhelming preference of railroad men:

"These engines," he reports, "represent considerable savings. They're absolutely dependable. The engineer and conductor tell me that this Cat-powered locomotive is a pleasure to operate. It has plenty of reserve power; it's easy to service and keep clean."

But let's talk ledger-book fundamentals. Here's how Caterpillar Railroad Diesels help you battle rising costs:

1. They stay on the job with proven availability—on some railroads as high as 99.7%.
2. They operate on low-cost No. 2 furnace oil.
3. You get immediate parts service—no need to tie up railroad funds in large parts inventory.
4. There are no parts orphans among Cat Engines no matter what their ages.

You're money and work ahead with Caterpillar Engines on your team. All leading manufacturers of locomotives, cranes and off-track equipment can supply them in the exact size for your requirements. Be sure to specify Caterpillar Railroad Diesels in new equipment. And when you re-power, visit your Caterpillar Dealer. He'll show you the engines that mean money in the bank.

Caterpillar, Peoria, Illinois.

CATERPILLAR*

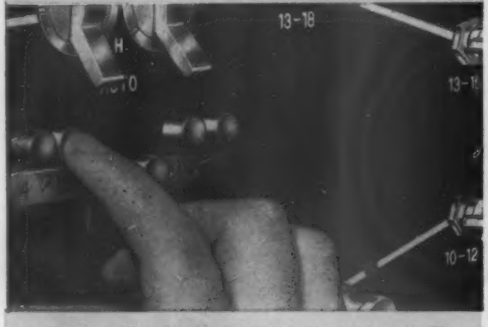
*Both Cat and Caterpillar are registered trademarks—®

SPECIFY CAT POWER FOR HIGH-PROFIT PERFORMANCE

SPEED UP!

WITH PUSH-BUTTON CLASSIFICATION

• Just press a button to route a cut to any desired classification track.



• Press another button, and retarder automatically breaks the cut to the selected speed.

• Just about a year ago, the Milwaukee Road installed the first complete push-button classification system at their Air Line Yard.

The "Union" Retarder Speed Control and Automatic Switching has been so satisfactory that the Milwaukee Road is installing *another* such system at their Bensenville, Illinois yard.

What's more, other railroads are installing "Union" Retarder Speed Control and Automatic Switching in an all-out effort to reduce delays as well as costs of classifying freight cars.

You can do it too. Let our representatives show you how much time and money you can save.

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

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November 16, 1953 **Vol. 135, No. 20**

Week at a Glance

The HERTZ Rail-Auto Plan

is taking millions of travelers off the highways...and putting them back on the railroads!

More and More Railroads are joining Hertz in Promoting the Rail-Auto Plan

Yet the fight has just begun . . . and it's the railroad's fight too!

An amazing fact! Last year motorists drove approximately 500 billion miles between cities! Here is the heart of the biggest and most persistent competition railroads face today!

An effective solution! As originated by Hertz, the Rail-Auto Plan strikes at the very core of city-to-city driving! People drive long, tiring, hazardous road miles not because they want to drive . . . but because they need and want a car at their destination. Hence, the Hertz Rail-Auto Plan *sells* rail travel for greater comfort and convenience . . . and a Hertz Rent-A-Car upon arrival at passengers' destination.

Hertz Rail-Auto brings startling results! This Hertz Rail-Auto Plan, as promoted by Hertz with the ever-growing cooperation of railroads, has brought increased revenue to both Hertz and the railroads.

Last year, people who rented cars from Hertz at their railroad destinations, traveled approximately 136 million miles on railroads!

And make no mistake about it! Many rail passengers traveled these rail miles *mainly* because they knew they could rent a car from Hertz at their destination!

Powerful Hertz advertising promotes the Rail-Auto Plan! Throughout the year Hertz sells the Rail-Auto Plan in leading national magazines to millions of readers. And—it's paying off.

Alert railroad management joins the fight! Thanks to your cooperation . . . promotions . . . advertising . . . and personal efforts of your ticket agents, the Hertz Rail-Auto Plan is growing steadily . . . consistently . . . successfully. But—there is still much to do. Use displays in your ticket offices. Advertise the Plan in your timetables. Run separate rent-a-car advertisements and in your own general advertisements devote space to the Plan.

Tell your ticket agents about Hertz 10% commission! This additional income for your agents—and it takes only a few minutes to earn it—plays an important part in advancing the Hertz Rail-Auto Plan. Tell your agents to ask this simple question of all passengers buying rail tickets:

May I reserve a car for you at your destination?

The Hertz station concerned will pay 10% commission on the total rental charge promptly.

Remember! Hertz, the largest rent-a-car system in the world, established for 29 years, offers its excellent, dependable service at more than 700 stations in over 500 cities throughout the world. Hertz honors Rail Credit Cards . . . and more than one million and a half Hertz Charge Cards and Courtesy Cards! Hertz spends more than $2,000,000 yearly in advertising. Hertz provides rail travelers with new clean cars with all gasoline, oil, Public Liability, Property Damage, Fire and Theft Insurance and $100.00 deductible collision protection included in the low rate—at no extra cost.

WRITE TODAY for additional information . . . reservation forms . . . for everything your ticket agents need to promote the Rail-Auto Plan . . . continuously . . . actively . . . profitably. It's your fight, too!

Dept. D11, 218 S. Wabash Avenue, Chicago 4, Illinois; phone: WEbster 9-5165 **HERTZ** *Rent-A-Car* **SYSTEM**

Current Statistics

Operating revenues, nine months	
1953	$ 8,082,250,257
1952	7,753,276,654
Operating expenses, nine months	
1953	$ 6,087,046,185
1952	5,973,064,639
Taxes, nine months	
1953	$ 972,804,921
1952	909,278,663
Net railway operating income, nine months	
1953	$ 845,430,758
1952	735,326,363
Net income, estimated, nine months	
1953	$ 651,000,000
1952	532,000,000
Average price railroad stocks	
November 10, 1953	59.80
November 11, 1952	64.18
Carloadings revenue freight	
Forty-four weeks, 1953	33,092,478
Forty-four weeks, 1952	32,173,910
Average daily freight car surplus	
Wk. ended November 7, 1953	11,002
Wk. ended November 8, 1952	3,235
Average daily freight car shortage	
Wk. ended November 7, 1953	2,289
Wk. ended November 8, 1952	9,346
Freight cars delivered	
October 1953	8,727
October 1952	5,437
Freight cars on order	
November 1, 1953	35,171
November 1, 1952	90,708

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Departments

Week at a Glance CONTINUED

Week at a Glance CONTINUED

BRIEFS

Definite coolness toward "piggy back" transportation of truck trailers on railroad flat cars was demonstrated by delegates to the American Trucking Associations' Los Angeles convention. A special committee was created to investigate all phases of the plan, but an executive committee resolution recited a number of real or imaginary objections to it.

Bucking a trend is what the I.C.C.'s new managing director, E. F. Hamm, regards as one of his tough assignments. In an economy year and an economy administration, the commission must try to get more money.

For the longer outlook, Mr. Hamm sees in staff recruiting an opportunity to pave the way for consolidating and streamlining. His idea is that recruits might be selected and trained with a view to spreading their talents over wide areas of commission staff activities

Greater utilization of motor carriers will be made by the Post Office Department, according to John C. Allen, assistant postmaster general in charge of the Bureau of Transportation. He told truckers at their recent convention in Los Angeles that studies—"not intended to take business from any competitive transportation system, but to find the transport media which can do the best, most economical job"—point to greater utilization of motor carriers and airplanes in postal service. "We will buy the best transportation system available on the most economical terms," he said.

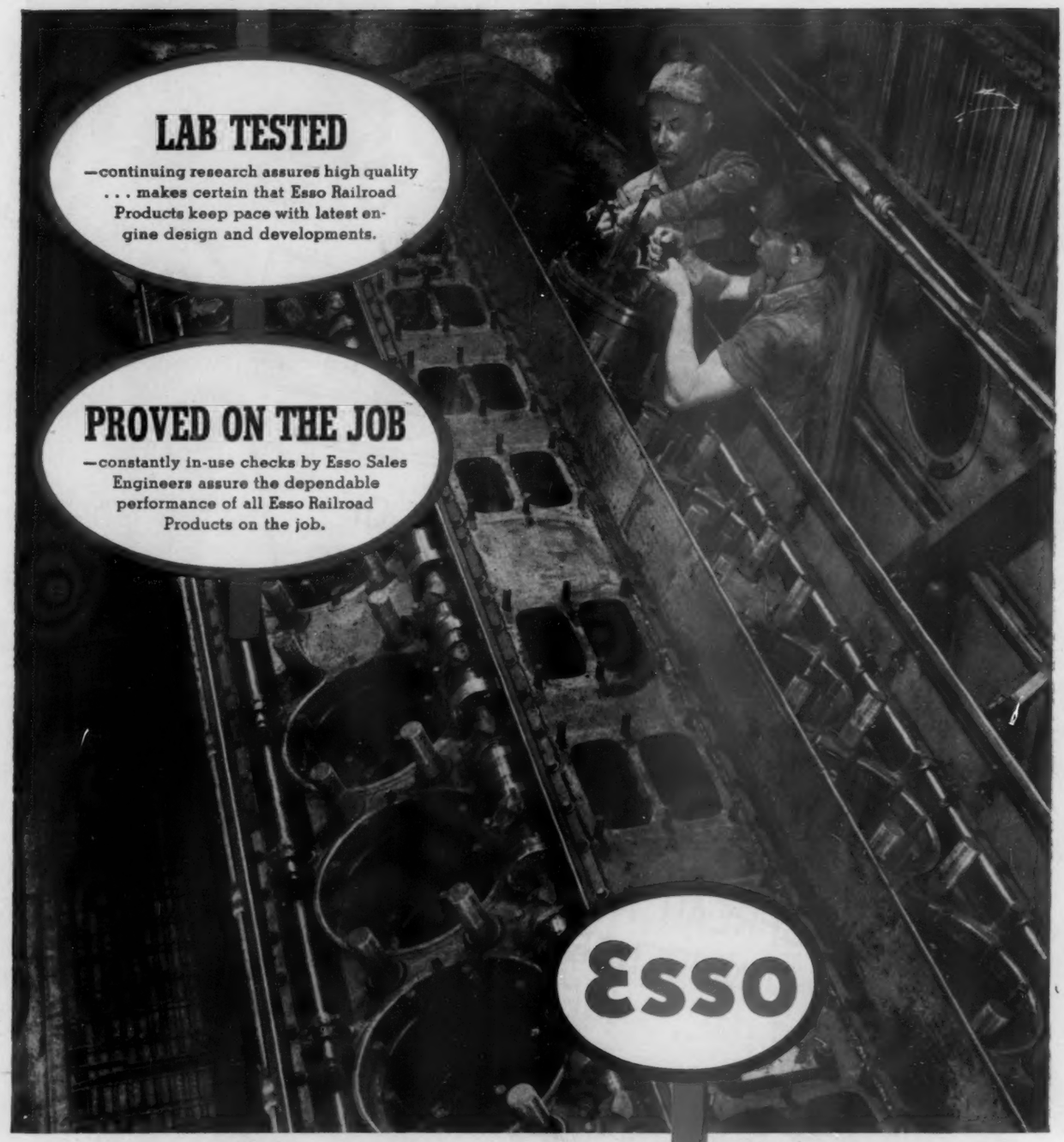
Air freight minimum rates are scheduled to go up 25 per cent this week. C.A.B. ordered the increase, effective November 20. Actually, the air freighters will have to boost rates only about 12 per cent, since existing charges generally exceed the minimum.

A hot subject in Chicago political circles these days is air pollution. The city set aside October 18-24 as "Cleaner Air Week," and the city council went so far as to hold hearings on a proposed ordinance to ban all coal-burning locomotives after January 1955. Nearby in Gary, Ind., the recently formed Midwestern Air Pollution Prevention Association held a convention, but in all their publicity handouts, there was hardly a mention of locomotives.

Extension of its car-service powers to include express companies will be recommended by the I.C.C. in its annual report to Congress. The recommendation will be based on the new express contract, which has provisions obligating the Railway Express Agency to furnish its shippers with reefers and other special-type cars.

Transportation in college curriculums has become a major interest of the trucking industry. Subcommittees of American Trucking Associations' National Committee on Education met last week with university professors from all parts of the country. The conference was billed as "first large-scale meeting of a broad representative group of the motor carrier industry with educators."

"Walkie-talkie" for "big hook."—The Texas & Pacific has installed a combination walkie-talkie and public address system on its wreck train at Fort Worth. Three loudspeakers have been placed on the wrecker. The foreman in charge may take the walkie-talkie off to a distance sufficient to survey the entire situation and give his orders right on the spot through the loudspeakers. The system is effective over a quarter-mile radius.



ESSO RUST-BANS

Used extensively on overhauled and rebuilt railroad diesel engines and spare parts . . . Esso Rust-Bans provide a dependable protective coating that helps prevent rust and corrosion. Esso Rust-Bans are available in several types for protection of both precision engine parts and heavy machinery which must be stored outside.

"RUST-BAN is a registered trade-mark"

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DEPENDABLE ESSO RAILROAD PRODUCT

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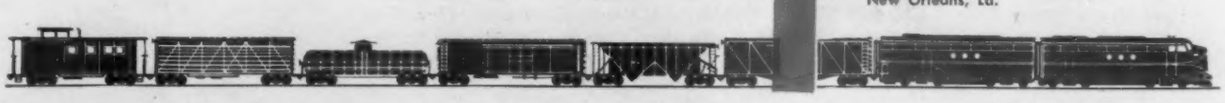

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Peters Finds Tariffs Are Simpler

Chairman of N.I.T. League committee reports satisfying progress, but says big job is still ahead. Praises railroads for "progressive spirit."

The Railroads' Tariff Research Group has made "tremendous and satisfying progress" in the program of tariff improvement, according to John W. Peters, chairman of the Cooperating Committee of the National Industrial Traffic League.

Mr. Peters is traffic manager of the Delco-Remy Division of General Motors. He spoke last week at a meeting of the Birmingham, Ala., Traffic and Transportation Club.

While expressing pleasure with progress made to date in the tariff-simplification program, Mr. Peters said "more difficult steps" are still ahead. He said the first phase of the program, concerned primarily with the form and arrangement of tariffs, is rapidly being completed.

"The balance of the program takes us into weightier aspects of the problem," Mr. Peters declared. "The solution of these problems will tax our patience and our statesmanship. But we are completely dedicated to the task before us, we have learned to work together, and I unqualifiedly predict a wholly successful result in every reasonable aspect."

A Cooperative Program. — The tariff-simplification project is a cooperative effort on the part of the railroads and the N.I.T. League. The Tariff Research Group, headed by C. S. Baxter, is the "working arm" which develops and recommends ways for simplifying freight tariffs. These recommendations are then considered by the N.I.T. League Cooperating Committee and the railroads' Administrative Committee. Those groups held their latest joint meeting in Birmingham last week.

Mr. Peters' speech was prepared for delivery November 13 at a "railroad night" dinner meeting of the Birmingham club. A major part of the speech was devoted to "the immense contribution the railroads have made toward the development of the American way of life."

The Delco-Remy traffic manager praised the carriers for their "progressive spirit" since World War II. He said they emerged from the war "healthy but tired," and entered an era of rehabilitation and modernization under conditions "somewhat less than ideal."

Signs of Progress.—Since World War II, he pointed out, the rail carriers have expanded their diesel fleet, and this new motive power has enabled them to set up faster schedules and maintain them.

There has been, he added, a "major revolution" in passenger-train equipment. New passenger cars testify as to "the progressive thinking in the railroad industry and to its desire to cater to the comfort and safety of the traveling public."

A half-million new freight cars have been built, and thousands of old cars have been so completely rebuilt they approximate new cars in efficiency and serviceability, Mr. Peters continued. Included in the modernized fleet are specially designed cars for meeting the peculiar requirements of particular products and industries.

In the fields of traffic control and communications, "we find amazing developments perfected;" and there has been progress at a "fantastic pace" in mechanization, in maintenance and freight handling equipment and in office systems, Mr. Peters said.

N.I.T. League Is Pleased.—"Those of us who have banded together in the membership of the National Industrial Traffic League . . . are happy to acknowledge this phenomenal record of progress," he declared. "We have a high stake in the fundamental soundness, the prosperity and the efficiency of a vigorous privately owned system of railroad transportation and we assure our railroad friends of our continuing encouragement for their endeavors in that direction."

Elsewhere in his speech, Mr. Peters said industrial traffic managers do criticize the railroads for their short-comings, but such criticism is, in the main, constructive. This criticism, he said, has been the inspiration for important improvements in railroad plant and service.

As a result of shipper-carrier joint effort, Mr. Peters said, freight car shortages have passed from the scene of our normal economy, "clean car" campaigns have been initiated, and research groups have been established to study less-carload and loss and damage problems.

GN Buys Second Tract in Spokane

For the second time this year, the Great Northern has acquired a substantial tract of land in the Spokane, Wash., area. The latest acquisition is an 84-acre area in suburban Greenacres, some 15 miles east of Spokane along the Coeur d'Alene line. The other, also

ADDITIONAL PASSENGER SERVICE between Montreal and the Laurentians was inaugurated by the Canadian Pacific November 9, when a Budd rail diesel car—designated by the CPR as a "Dayliner"—began a daily round trip over the 163 miles between Montreal and Mont Laurier. Here, the new car receives an enthusiastic welcome at Ste. Agathe. The car is one of four ordered by the CPR (*Railway Age*, September 14, page 15). Two of the others will be used between Toronto and Detroit and one between North Bay, Mattawa and Angliers.

east of the city, is a 41½-acre tract along the Valley branch, purchased last July.

The GN has indicated no immediate plans for industrial development of either area.

Personal Solicitation Is Best

Railway freight traffic officers agree with their customers; it's the "Number One" business getter

Railroad freight traffic managers are in full accord with their customers when they rate personal solicitation as the most effective single business-getting practice. The officers rate it tops both in gaining new business and in holding business they already have.

This agreement with their customers was revealed in a poll conducted among railway freight traffic officers by *Railway Age's* companion publication, *Railway Freight Traffic*. The same question had been posed to shippers in a poll conducted two months earlier.

Of the five activities suggested as points for railroads to stress in seeking new business, personal solicitation received 67 first place votes out of 77.

But as to the remaining four categories, the railroad men differed with the opinion of their customers. Whereas the industrial traffic managers had named "frequent mailings on service and schedules" as the second best promotional method to follow, the railway officers put "industrial locations aid" in the Number Two spot. There was a significant difference, too, on use of "national advertising in business magazines." In the industrial traffic men's vote, this category rated only fourth place; the railroad men put it third.

The idea of keeping shippers informed by mail of service changes, schedule additions, etc., was considered important by the railroad panel, but they placed it fourth—just a few votes behind the medium of business magazine advertising. Comparatively weak support was given to the business-getting value of advertising in general circulation magazines.

Operations

I.C.C. Approves New Express Pact

Contract, extending from March 1, 1954, to December 31, 1973, will continue express operations "substantially according to the present plan"

The Interstate Commerce Commission has approved the new contract under which operations of the Railway Express Agency will be continued after February 28, 1954, the expiration date of REA's present agreement with the railroads. The term of the new pact is two months short of 20 years—from March 1, 1954, to December 31, 1973.

The commission's favorable action was its approval of the pooling of railroad traffic, service and earnings involved in conduct of the express business. The case was No. 31317 and the report was by Commissioner Knudson. Commissioner Elliott concurred "in the result," and Commissioners Alldredge and Arpaia did not participate.

Some Changes—As the commission put it, the new contract contemplates continuance of express service "substantially according to the present plan." There are, however, some differences from the present contract which has been in effect since March 1, 1929.

The new agreement permits a participating carrier to withdraw on 18 months' notice on the first day of any month after December 31, 1958. The present contract gave no right of withdrawal before the end of its 25-year term.

Another change alters the method of dividing revenue from intergroup traffic, and "presumably disposes of the controversy" with respect to that matter, the commission said. There are also provisions whereby a territorial group of railroads may direct REA to ask regulatory authorities for permission to add territorial surcharges to basic express rates. Also, Class II and III roads within a territory (acting as individuals or in groups) may likewise require REA to petition for special surcharges for their benefit.

Car Service—A change in car-service provisions makes it the obligation of REA to furnish express shippers with refrigerator or other special-type cars. The new provisions also provide specifically that the rail carrier shall not be obligated to furnish such cars. The present contract requires railroads to furnish cars for express traffic without limitation as to type.

Interveners in the case (Department of Agriculture and representatives of perishable shippers) objected to this "shift of obligation." The commission said: "Actually the change appears to be of little practical effect, for only a few of the larger rail carriers have in the past furnished refrigerator cars suitable for express movement in passenger trains."

The interveners also complained about express service, but the commission refused to impose any requirements in that regard. At the same time it gave REA this admonition:

"In our recent reports relating to express rates we have recognized the need for better express service. . . We shall therefore rely for the present on the promise of the Agency's officials to make every effort to remove the causes of complaint by the shippers of perishable traffic."

33 Passengers Injured In PRR Derailment

Thirty-three passengers were injured when a Pennsylvania suburban train, inbound from Chestnut Hill to Philadelphia, was derailed on a bridge over the Schuylkill river, just outside the Pennsylvania Station at Thirtieth Street, Philadelphia, about 8:30 a.m., November 11. Up to press time for this issue the cause of the accident had not been determined, according to a statement issued by A. J. Greenough, PRR Eastern Region vice-president at Philadelphia.

Supersonic Rail Joint Inspector

A new hand-carried electronic device which inspects rail joints internally by supersonic means, is now in use on the Pennsylvania.

In announcing the new "audigage flaw detector," as the device is known, the railroad reported that it indicates imperfections that may develop in rail at the ends, at switches and crossovers, and in paved highway crossings, long before flaws become visible to the eye. It augments other electronic devices employed to inspect the internal structure of rail generally.

The audigage is carried and operated by one man. It consists of a long-handled detector unit, electronic equipment carried in a small pack on the operator's back, and a pair of earphones. As the operator slides the detector unit along the top of the rail at a joint, he hears in the earphones a steady, high pitched tone which de-

scends to a growl whenever the detector passes over an imperfection. Should a flaw be discovered, the bolts and joint bars are removed to permit complete examination of the rail and its replacement.

With audigage detectors now in use in all areas of the system, the Pennsylvania is checking rail joints at a rate of 336,000 annually, representing more than 1,200 miles of track. In addition, rails in highway crossings are being examined, without disturbing the paving, at a rate of 14,500 crossings a year.

Law and Regulation

Crossing-Work Costs Need Not Be on Benefit Basis

The United States Supreme Court has ruled that railroads may be called upon to pay larger shares of grade-crossing improvement costs than would be assessed on a benefits-received basis.

The ruling affirmed decisions of the Supreme Court of California, from which the Atchison, Topeka & Santa Fe and Southern Pacific had appealed. At issue were orders of the Public Utilities Commission of California requiring those roads to pay 50 per cent of the cost ($569,355 and $1,493,200, respectively) of crossing improvements on their lines in Los Angeles, Cal.

Little or No Benefit—The railroads contended that their shares of the costs should be based on benefits received, that they would receive "little or no benefit," and thus should be required to pay "only a small part of the costs or nothing." The 50-percent assessments, they also contended, take their properties without due process of law and interfere with interstate commerce.

The California commission decided that it was not bound by the benefits-received theory, or any other theory, but could allocate the costs "in the exercise of its sound discretion." In upholding that position, the U.S. Supreme Court said:

"These were not improvements whose purpose and end result is to enhance the value of the property involved by reason of the added facilities . . . where the costs assessed must bear some relationship to the benefits received . . . Rather the improvements were instituted . . . to meet local transportation needs and further safety and convenience, made necessary by the rapid growth of the communities. In such cases, this court has consistently held that in the exercise of the police power, the cost of such improvements *may* be allocated all to the railroads. . .

"There is the proper limitation that such allocation of costs must be fair and reasonable . . . This was the standard applied by the commission . . . The railroad tracks are in the streets not as a matter of right but by permission from the state or its subdivisions. The presence of these tracks in the streets creates the burden of constructing grade separations in the interest of public safety and convenience. Having brought about the problem, the railroads are in no position to complain because their share in the cost of alleviating it is not based solely on the special benefits accruing to them from the improvements."

Role of I.C.C. Chairman

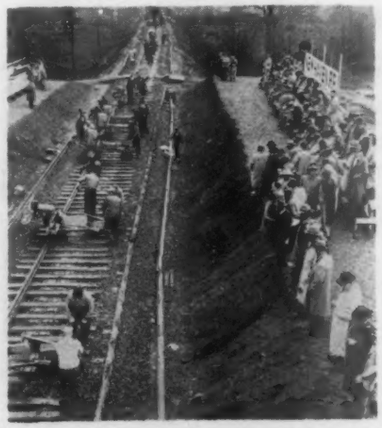
The Interstate Commerce Commission recently brought together in one notice various "organization minutes" relating to the duties and responsibilities of the commission chairman. The present chairman is Commissioner J. Monroe Johnson.

The notice continues in effect the recent commission determination that the chairman shall be relieved of any regular assignment as a member of a division, except for his ex officio membership on the administrative division (Division 1, of which Commissioner Charles D. Mahaffie is chairman); and his ex officio chairmanship of the commission's Committee on Legislation.

Still Has Expediting Job—Also continued is the chairman's assignment as expediter of the commission's work. That minute now reads as follows:

"He shall (a) bring to the attention of any commissioner, division, or board any delay or failure in the work under his or its supervision, (b) report periodically, not less than once every six months, to the commission on the state of the commission's work, and (c) recommend to the commission ways and means of correcting or preventing avoidable delays in the performance of any work or the disposition of any official matter which he is unable otherwise to have remedied."

New among the minutes is that providing that the commission's new managing director, its chief counsel, and its secretary shall report through the chairman to the commission. Another



MODERN METHODS of laying railroad track were demonstrated by the New Haven at Plainfield, Conn., October 29, to an informal "Sidewalk Superintendents' Club," consisting of some 200 invited businessmen, public officials and press representatives from on-line communities (*Railway Age*, November 9, page 23).

minute makes clear the chairman's authority to call a special session of the commission, and requires him to do so on request of a majority of the members. Also, the chairman is authorized, if it appears desirable, to designate an additional commissioner or commissioners to sit with a division.

More Streamlining — Another recent commission notice expanded the authority of the chairman of Division 1. It authorizes him to enter reparation orders to carry out commission findings; to dismiss complaints upon requests of complainants and to enter vacating or discontinuing orders in proceedings where suspended matter has been withdrawn by respondents.

The same notice authorized the commission secretary to announce the staying of decisions, orders, etc., when petitions for reconsideration are filed before such decisions, orders, etc., have become effective. Also, it designated Commissioner Howard Freas as an additional member of Division 1 for the consideration and disposition of matters connected with the admission, disbarment, and suspension of practitioners before the commission.

Supreme Court Thwarts IC Recovery from Trucker

The United States Supreme Court has thwarted an Illinois Central undertaking to recover damages from the owner of a truck which collided with an overpass of its line, causing a subsequent derailment.

The adverse ruling was based on the venue question, the court holding that the trucker had been deprived of venue rights guaranteed by federal law. The trucker was not a resident of Kentucky, but the accident occurred there; and the IC brought its suit in the United States District Court for the Western District of Kentucky. It obtained a favorable verdict, which was affirmed by the U.S. Court of Appeals for the Sixth Circuit to which the trucker appealed. The trucker then appealed to the U.S. Supreme Court.

In filing its suit in that state, the IC relied on a Kentucky statute holding non-resident motorists amenable to suit for accidents caused by their negligent operations within that state. The Supreme Court held that, while such statutes provide a fair rule of law as between a resident injured party and a non-resident motorist, they do not override federal venue rights in cases, as here, where both litigants are non-residents.

The case was docketed in the Supreme Court as No. 27, S.G. Olberding, doing business as Vess Transfer Company and Charles Darnell vs. Illinois Central. The decision was announced November 9 by Justice Frankfurter, and Justices Reed and Minton joined in a dissenting opinion.

RAILROADS FIGHT MILITARY BIAS

RAIL/BUS EVALUATION AND RECAPITULATION WORK SHEET SP-113

FROM: Camp Stoneman, Cal		TO: Camp Kilmer, N J		PCS: X	
LV: [redacted]		TIME:		TDY:	
OFFICER	RCO	EM: 421	CONVOY	MESS CREW	TOTAL: 421

		RAIL	BUS	AIR SCHEDULED (See Attached Sheet)	AIR IRREGULAR
Rail Quotation FARE(S)	VIA RAIL 421 x 78.50	33048.50		No bid	43974.20
	VIA BUS				
PULLMAN CHARGES Pullman Quotation	LOWERS 421 x 17.55	7388.55			
	UPPERS				
COST OF MEALS ENROUTE	xx @ 18.25 x 421	7683.25			
COST OF TROOP KC @	PER MILE MILES				
TRAVEL TIME (Hours and Minutes)					
PER DIEM ALLOWANCES					
EXCESS CHARGES (Switching, Baggage, Etc.)					
CONVOY OR MESS CREW RETURN TRANSPORTATION CHARGES					
CONVOY OR MESS CREW RETURN PULLMAN CHARGES	LOWERS				
	UPPERS				
CONVOY OR MESS CREW RETURN PER DIEM ALLOWANCES					
SUPPLEMENTARY TRANSPORTATION		55.00			908.73
	TOTAL COST	48175.30			44882.93
	NET SAVINGS	Via Air	ACTA-TRATA		3292.37

ESTIMATED BY | DATE | APPROVED BY

TOPTO FORM 1 NOV 1952 6

421) 44,882.93 = 106.61 Per Capita Air

HOW THE MILITARY "EVALUATES" BIDS received for movement of enlisted personnel is illustrated by this bid evaluation sheet covering an actual move made during October. In recent weeks, railroads have started a system of "spot quotations" somewhat under the standard military rate, in an attempt to capture moves which might be handled profitably, and to combat inroads being made by non-scheduled air carriers.

On the move illustrated here, the military added the cost of 11 meals to the cost of rail transportation. In recent negotiations, the railroads have made the claim that this is unreasonable, because the men must eat, whether they are on the ground or on a train. Their claim that the whole meal cost should not be charged against the cost of rail transportation has been sustained by the recent announcement that, on future evaluations, cost of camp subsistence will be subtracted from railroad meal costs.

This evaluation sheet illustrates the fact that railroads are not losing traffic because of high transportation costs, but on the basis of "unrealistic evaluations." Other steps are being planned to further the railroad's campaign to get "a fair shake" in allocation of traffic between kinds of carriers.

Rates & Fares

Eastern Roads Cut Hay Rates

Eastern railroads have agreed to grant a 50 per cent reduction in freight rates for transportation of hay to drought areas.

Edgar V. Hill, chairman of the Traffic Executive Association—Eastern Railroads, said the new rates went into effect November 7, from all points in Eastern territory to government-designated drought areas. He explained that this action was taken in response to a request by the Department of Agriculture, when it developed that "surplus hay from many points in Eastern territory will be urgently needed in these areas."

Mr. Hill said there is no accurate way to estimate the value of this service, because the volume of traffic and length of hauls is not known. "However," he added, "since it involves a reduction of 50 per cent of current tariffs, it is fair to assume that it will represent a contribution of several hundred thousand dollars by Eastern railroads." Eastern states expected to supply hay include Pennsylvania, New York, Ohio, Indiana, Illinois and Michigan. In addition, some may have to be procured from Canada.

Intrastate Rates Raised To Save Jurisdiction

The California Public Utilities Commission has carried out an order of the Interstate Commerce Commission allowing a proposed nine per cent increase in intrastate rail freight rates to become effective November 13. Actually, the state commission, by its Decision No. 49290, authorized rail lines to apply a 15 per cent surcharge in

lieu of a 6 per cent surcharge authorized and in effect since 1951.

The state commission has been opposed to the increase. It first denied it and later opposed it when the matter was placed before the I.C.C. However, the federal commission found the increase justified, and ordered the California commission to put it into effect. This was done November 3. But in a press statement issued on that date, the commission said it was done "in order for the state body to retain jurisdiction over intrastate freight rates." (The Interstate Commerce Act provides that, if a state body does not act on such an I.C.C. ruling, the federal commission may authorize the increase, thereby assuming jurisdiction over rates thus affected.)

And because highway carriers are not permitted by California to maintain rates lower than those of railroads, the commission authorized a similar increase for truckers.

MORE CAPACITY has been provided for the Alabama, Tennessee & Northern's barge service between Mobile, Ala., and industrial plants on nearby Blakeley island. The new rail barge "Pinto"—shown here at launching—holds 10 to 12 freight cars and was built by Addsco Barge Yard at Mobile.

Mississippi Rates

The Interstate Commerce Commission has found that unjust discrimination against interstate commerce results from the Mississippi Public Service Commission's refusal to authorize intrastate freight rate increases in line with interstate advances.

The commission withheld entry of an order, but said one would be issued unless the Mississippi commission acts promptly to permit the increases called for. The report, in No. 31164, was accompanied by a dissenting opinion from Commissioner Freas. He said again, as he had in a recent Missouri case, that the railroads had not met the standard of proof which he believes the Interstate Commerce Act requires. (*Railway Age* November 2, page 65.)

I.C.C. Clarifies Findings On North-South Divisions

The Interstate Commerce Commission has made clear that its decision in the North-South divisions case was intended to provide more favorable divisions of rates for official territory railroads on "all interterritorial traffic in which they participate."

That means the findings require a revision of divisions of rates between points in official territory and points on railroads assigned to the Western district where official-territory lines participate as intermediate carriers. The commission has thus interpreted its findings in a second supplemental report in the case, which is No. 29885.

The report also broadened the definition of northern lines to include the Toledo, Peoria & Western. And it reopened the case for further hearing to determine whether there should be a revision of divisions of rates on traffic which western lines interchange directly with southern roads; and to fix divisions on traffic moving between Official territory and points on the Atlantic & Danville.

That road, formerly part of the Southern, resumed independent operation after hearings in the case had begun, but it was never named as a respondent in its own corporate capacity. It now takes the position that its divisions are not subject to the findings heretofore made.

Purchases & Stores

Pencil Consumes Earnings Of 1½ Ton-Miles—Bromley

"To buy even an ordinary lead pencil, the Canadian National must haul a ton of freight almost a mile and one-half; when a keg of spikes is involved that ton has to be carried 573 miles; and when we go out to buy a two-unit diesel, it's with the knowledge that it's going to eat up the earnings of 29,527,557 ton-miles," E. A. Bromley, CNR vice-president, purchases and stores, said in Boston November 3.

Addressing the New England Railroad Club's combined Canadian and purchases and stores night, Mr. Bromley described the CNR as "Canada's largest individual consumer" and said that last year the railroad shopped with 11,000 firms and spent over $300,000,000 in the process. Over the past 10 years, he added, CNR purchases have totaled $1,878,000,000.

Caviar and Steel—"Every year we go to market for 75,000 different items ranging from locknuts to locomotives, from ballast to bed linen, from caviar to stewing beef, from silk stockings to structural steel," the CNR officer continued. "If what I have just said seems to suggest that Canadian railroaders are guilty of some unorthodox high-living, I should point out that caviar is purchased for the railroad's hotel dining rooms, and the silk stockings are resold in specialty shops at our summer resorts."

Mr. Bromley said the largest single item of railroad purchases is fuel, which is second only to wages among the CNR's operating expenses. Last year's CNR fuel bill was $70,000,000. The character of the railroad's fuel requirements is changing because of the dieselization program, which contemplates having 966 diesel units operating by 1956. "As one index of this trend, taken from the purchasing angle, I can tell you that just five years ago the number of barrels of oil used on the system was only about 25 per cent of the total number of tons of coal consumed. This year we experienced the first month in our history in which the number of barrels of oil used exceeded the number of tons of steam coal required."

Labor & Wages

Dispatchers Get Raise

A wage increase of $8 per month, retroactive to December 1, 1952, was agreed upon at Chicago November 5 by the railroads' regional conference committees and the American Train Dispatchers Association, representing about 3,200 employees.

Agreement was also reached to go ahead with collective bargaining on the dispatchers' demands for extended vacations and sick leave and the carriers' request for certain rules changes. The union has withdrawn a number of proposed rules changes.

The dispatchers are seeking three weeks' paid vacation after five years

COAST-TO-COAST TRAILERS; 108-HOUR TRANSIT TIME

Daily through coast-to-coast truck-trailer service has been established by Interstate Motor Lines and Mid-States Freight Lines on a trailer interchange arrangement through the Chicago gateway.

In a pamphlet announcing the new service, the two truck lines claim a 72-hour transit time from the San Francisco-Oakland Bay area to Chicago, and a 36-hour transit time from Chicago to Jersey City and New York.

The trailers operate through from coast to coast on a daily basis and are equipped with a sliding-type tandem axle arrangement that can be altered to satisfy various state axle loading requirements without handling lading enroute. The change is reported to require only five minutes.

The trailers are handled by Mid-States between Chicago and the East; by Interstate between Chicago and the West Coast. Both truckload and less-truckload shipments are handled, and refrigerated service is available. Both companies handle the service on a driver-relay basis to eliminate delays en route.

of service and four weeks after 15 years. They also are asking sick leave of from 10 to 20 days, to be cumulative to a maximum of 80 days.

The dispatchers' negotiating committee was headed by President O. H. Braese. The Carrier representatives were F. J. Goebel, vice-president—personnel, Baltimore & Ohio; D. P. Loomis, chairman, Association of Western Railways; and B. B. Bryant, assistant vice-president (labor relations), Chesapeake & Ohio.

No New Developments In Non-Op Case

The passage of a week brought little apparent change in the status of the "fringe"-benefit-demand case of the 15 non-operating railroad unions. As reported in *Railway Age*, November 9, page 10, the unions have broken off negotiations on their vacation-holiday and Sunday-work demands and the carriers have filed suit for declaratory judgment as to whether the unions' health, welfare and free transportation demands are negotiable under terms of the Railway Labor Act.

Both union and carrier representatives were in Chicago late last week and it is understood that National Mediation Board members are discussing the case separately with both parties.

Overseas

Ireland. — Coras Iompair Eireann (Ireland's Transport Company), will purchase 105 diesel locomotives in 1954, including 90 locomotives ranging from 550 hp. to 1,400 hp. for high-speed trains, and 15 locomotives between 250 hp. and 350 hp. for lighter services. It is reported by the Irish Railways that diesel trains in Ireland can be operated at about 25 per cent less than the average cost of steam traction. Average daily mileage of diesel trains in Ireland is 310, while steam locomotives average about 125 miles.

MODERNIZATION of the Northern Pacific's Spokane passenger station, begun in 1949, has been completed at a cost of $475,000. Besides complete renovation of the station building, the work included rebuilding of concourses and tunnels to tracks; replacement of retaining walls; and six new stairways from tracks to a completely new 135-ft. concourse. In addition, all plank platforms were removed and replaced with asphalt concrete.

Pale green ceramic tile is combined with aluminum trim and flashings along the lower floor exterior. The sidewalk is covered by an aluminum and steel canopy and the adjoining glassed-in entrance has two sets of double glass doors leading to the waiting room. Inside arrangements were altered to permit a larger waiting room and lunchroom and parcel facilities at more convenient locations. Modern, recessed lighting fixtures highlight the new interior decor.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight for the week ended November 7 were not available as this issue went to press.

Loadings of revenue freight for the week ended October 31 totaled 780,863 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, October 31

District	1953	1952	1951
Eastern	128,456	144,616	138,828
Allegheny	154,218	168,148	168,637
Pocahontas	54,595	55,418	65,775
Southern	127,032	132,533	136,245
Northwestern	122,450	147,896	122,783
Central Western	133,152	145,316	140,061
Southwestern	60,960	68,189	65,288
Total Western Districts	316,562	361,401	328,132
Total All Roads	780,863	862,116	837,617
Commodities:			
Grain and grain products	56,865	57,409	54,805
Livestock	15,166	15,565	16,110
Coal	129,995	137,404	161,932
Coke	12,663	15,091	16,656
Forest products	46,191	48,683	45,529
Ore	63,590	92,700	59,624
Merchandise l.c.l.	71,202	74,865	75,601
Miscellaneous	385,191	420,399	407,360
October 31	780,863	862,116	837,617
October 24	804,413	760,773	864,800
October 17	822,539	838,408	886,648
October 10	804,070	842,797	868,683
October 3	812,554	851,920	858,757
Cumulative total, 44 weeks	33,092,478	32,173,910	34,660,204

Organizations

A.S.M.E. Annual Meeting

Sessions of the 1953 annual meeting of the American Society of Mechanical Engineers will be held in three New York hotels—the Statler, McAlpin, and Governor Clinton—November 29 to December 4, inclusive. Registration will be at the Statler, society headquarters during the meeting. The subject of the Roy V. Wright Lecture, to be held at 12:15 p.m., Wednesday, December 2, will be "The Medallist." It will be presented by Thomas Millsop, president, Weirton Steel Company. The banquet will be held at 7 p.m. the same day. Gwilym A. Price, president, Westinghouse Electric Corporation, will be the speaker.

The tentative program, in part, follows.

MONDAY, NOVEMBER 30
9:30 a.m.

Fuels (I)—Fuel Trends in the Next Twenty Years.

2:30 p.m.

Fuels (II)—Storage Changes as They Influence the Oil Picture.

8:00 p.m.

Metals Engineering (II)—Applied Mechanics (III-B)—Thermal Checking of Wrought-Steel Railway Wheel Material, by H. R. Wetenkamp, University of Illinois.

TUESDAY, DECEMBER 1
9:30 a.m.

Gas-Turbine Power (III)—Fuels (IV)—A panel discussion covering residual fuels in the gas-turbine industry.

Oil and Gas Power (II)—Panel on Filtration of Fuel Oil.

2:30 p.m.

Railroad (I)—Oil and Gas Power (III)—Hydraulic Transmissions for Locomotives, by J. S. Newton, Baldwin-Lima-Hamilton Corporation.

Standardization of Diesel Locomotives, by C. K. Steins, mechanical engineer, Pennsylvania.

WEDNESDAY, DECEMBER 2
9:30 a.m.

Railroad (II)—Lubrication (I)—Annual Report of Engineering Progress, by T. F. Perkinson, General Electric Company.

Symposium on the Technical Aspects of the Hot-Box Problem:

The Hogan Antiwaste Roll Cavity and Ledge Journal Box, by B. R. Jones, assistant general mechanical superintendent, New Haven.

Packing Retainer for Railroad-Car Journal Boxes, by H. J. Stewart, Union Spring & Manufacturing Co.

Spring-Type Packing Retainer for Journal Boxes (15-min. color-sound movie), by M. F. Brunner, Spring Packing Corporation.

A New Mechanical Oiler for Car Journals, by V. E. McCoy, chief purchasing officer, Milwaukee.

Modernizing Journal Lubrication, by Karl Klinger, Roth Rubber Company.

The Plypak Waste Container and Retainer, by J. W. Hulson, vice-president, sales, Waugh Equipment Company.

2:30 p.m.

Railroad (III)—Lubrication (II)—Symposium on Hot-Box Problems (continued):

Effect of Viscosity on Car Journal Oils on the Running Temperature and Other Characteristics of Journal-Bearing Performance, by W. M. Keller, director mechanical research, Mechanical Division, Association of American Railroads.

Hot Boxes—Some Fundamental Problems, by J. W. Hawthorne, general superintendent motive power and equipment, Atlantic Coast Line.

Effects of Off-Center Brake-Rod Pull on Performance of Railroad Freight-Car Trucks, by H. T. Rockwell, New York Central.

Hot Boxes and Train Operation, by G. R. Anderson, assistant chief mechanical officer, Chicago & North Western.

THURSDAY, DECEMBER 3
9:30 a.m.

Railroad (IV)—ASTM (I)—Symposium on Railway Steel Wheels:

Wrought-Steel Passenger-Car Wheels from a Consumer's Standpoint, by A. M. Johnsen, Pullman Company.

Measurement of Stresses Imposed on Wheels in Locomotive Service, by L. L. Olson, A.A.R.

Wheel Performance with Disk Brakes, by P. V. Garin, engineer tests, Southern Pacific.

Wheel Defects in Equipment with Clasp Brakes, by M. S. Riegel, supervisor personnel, NYC.

Railroading Today Through the Eyes of the Wheel Manufacturer, by C. B. Bryant, chief engineer, Technical Board, Wrought Steel Wheel Industry.

2:30 p.m.

Railroad (V)—Metal Processing (V-A)—ASTM (II)—Pressure Pouring Steel Car Wheels in Permanent Molds, by E. O. Sylvester, Griffin Wheel Company.

1.5 Per Cent Carbon Cast-Steel Railroad Car Wheels, by N. A. Matthews and R. A. Flinn, American Brake Shoe Company.

The Use of Steel Wheels in Freight Service, by B. C. Gunnell, chief mechanical engineer, Southern.

The annual meeting of the **Association of American Railroads** will be held at the Blackstone Hotel, Chicago, November 20. Highlights of the session will include election of the board of directors, a review of work carried on by the A.A.R. during the past year, and presentation of the program of activities for 1954. The annual report of the A.A.R. Research Center in Chicago will be given at the same time. The new board of directors will meet following the member road meeting.

At a dinner meeting of the **New York Railroad Club,** to be held in the Hotel Commodore, New York, at 7 p.m., November 23, D. W. Brosnan, vice-president, operations, of the Southern will speak on "Push Button Yards."

Supply Trade

Clark Announces Equipment Leasing Plan

Clark Equipment Company, manufacturer of industrial fork-lift trucks, towing tractors, and related materials handling equipment, has established an equipment-leasing program to operate through its dealers on a national basis, according to an announcement by W. E. Schirmer, vice-president. Financial arrangements for the program have been worked out with the Harris Trust & Savings Bank of Chicago.

"The program is not intended to promote the leasing of equipment in preference to outright purchase," Mr. Schirmer said. "Instead, it is being offered as a service to that segment of the industrial community which has need of a low-cost leasing arrangement."

Under terms of the program, the dealer is the owner and lessor, with Clark providing the direct financing. Equipment is leased to the customer for a three- or five-year period, with each annual rental, payable in monthly installments, being a declining amount based on the approximate rental value of a machine of varying age. Included in most lease agreements is the dealer's regular preventative maintenance contract. At the end of the three- or five-year periods, the lessee has an option of extending the lease on a year-to-year basis.

Stephen G. Peterson has joined the **Buffalo Brake Beam Company** as sales engineer for southeastern territory. He was previously field service representative in northeastern states for the **Pullman-Standard Car Manufacturing Company** and prior to 1947 was superintendent car department of the Seaboard Air Line.

H. W. Wiss has been appointed manager of the western district of the **Westinghouse Air Brake Company,** Air Brake division, at Chicago, succeeding **T. W. Masterman,** deceased. Mr. Wiss has been assistant manager at Chicago since September 1953, prior to which he was a representative in the southwestern district at Denver. **D. T. Kerr,** on the commercial engineering staff at Wilmerding, has been transferred to Chicago as a representative.

The Graybar Electric Company has opened a new branch at 923 Washington street, Portsmouth, Ohio, under management of **J. T. Young.**

Eastern headquarters offices for all divisions of **General American Transportation Corporation** will be located at 380 Madison avenue, New York, after November 23. The company's diversification program was extended recently with acquisition of the business and assets of **Parker-Kalon Corporation,** manufacturers of screw fastening devices.

W. A. MacDonald, vice-president, sales, of **Sterling Engine Company,** has been elected executive vice-president.

T. V. Learson, sales manager of the electric accounting machine division of **International Business Machines Corporation,** has been appointed general sales manager of all four product divisions of the company. **Orland M. Scott,** district manager

RAIL RADIO IN CARLOADS.—"A rare occurrence until recently," says the Bendix Radio Communications Division of Bendix Aviation Corporation. Shown here is the second carload of VHF communications units being shipped from the division's Towson, Md., plant as part of an order totaling 205 units placed by the Santa Fe last July. The car is destined for Fort Madison, Iowa.

at Cincinnati, has succeeded Mr. Learson, and has in turn been succeeded by **Bruce S. Chandler, Jr.**, previously a branch manager in El Paso and Des Moines.

E. B. Colven has joined the **Tucolith Sales Corporation,** New York, as sales engineer. He was formerly with the **Ellcon Company,** in charge of development and research in connection with railway specialties.

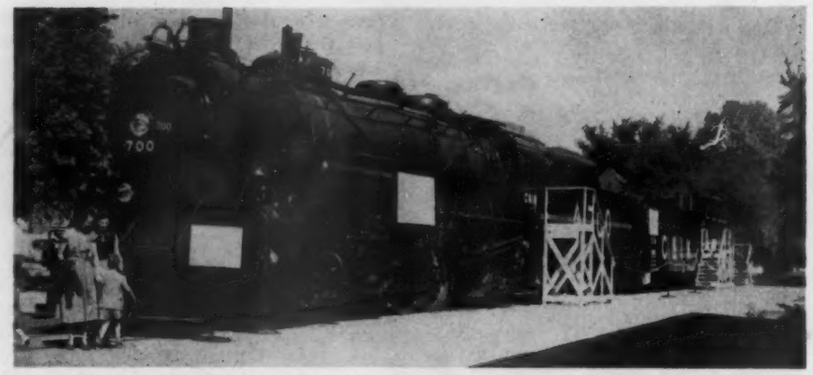
The **Skil Corporation,** Chicago, has moved four of its branch offices to new locations, as follows: 2800 Park avenue, New York; 2323 Greenmount avenue, Baltimore; 5616 N.E. Glisan street, Portland, Ore.; and 1620 East Riverside drive, Indianapolis.

The **Allis-Chalmers Manufacturing Company** has assumed operation of the **Buda Company** (*Railway Age*, July 6, page 24). It will be known as the Buda Company, a division of Allis-Chalmers. **Ralph K. Mangan,** with Buda for 36 years and president since 1950, is in charge of the division with the title of president and general manager.

James A. Galligan Company, 2246 East 73rd street, Chicago, has been appointed midwest representative and railroad consultant for **Fine Organics, Inc.,** manufacturers of safety solvents and cleaning materials.

OBITUARY

T. W. Masterman, manager of the western district of the Westinghouse Air Brake Company, Air Brake division, at Chicago, died at his home in Wilmette, Ill., October 23.



DOUBLE CENTENNIAL.—Early this fall the city of Havana, Ill., celebrated both the centennial of its incorporation and of the arrival of its first railroad. To lend emphasis to the latter half of the celebration, President F. L. Schrader of the Chicago & Illinois Midland arranged for this display of C&IM motive power and rolling stock. Many C&IM employees were costumed for the occasion, which recalled construction of the Illinois River Railroad. This line later expanded and became the Peoria, Pekin & Jacksonville. The C&IM today uses part of the PP&J right-of-way as well as that of the old Springfield & Northwestern.

Equipment & Supplies

FREIGHT CARS

8,727 Freight Cars Delivered in October

New freight cars for domestic use delivered in October totaled 8,727, the largest number delivered in any 1953 month so far, according to a joint announcement by the American Railway Car Institute and the Association of American Railroads. September deliveries had amounted to 5,706, and in October 1952 deliveries totaled 5,437.

Domestic orders were placed last month for 1,705 freight cars, and the backlog of cars on order and undelivered on November 1 was 35,171. A breakdown by types of cars ordered and delivered in October, and of cars on order November 1, follows:

Type	Ordered Oct. '53	Delivered Oct. '53	On Order & Undelivered Nov. 1, '53
Box—Plain	670	3,150	9,542
Box—Auto	0	0	1,000
Flat	4	74	2,674
Gondola	250	2,793	6,869
Hopper	0	597	4,721
Covered Hopper	40	610	2,969
Refrigerator	600	482	2,862
Tank	141	560	3,486
Caboose	0	5	151
Other	0	456	897
TOTAL	1,705	8,727	35,171
Car Builders	1,701	5,552	21,128
Railroad Shops	4	3,175	14,043

The **Erie** has ordered 10 50-ton cushion-underframe box cars from the Pullman-Standard Car Manufacturing Company at an estimated cost of $76,000. Delivery is expected in the first quarter of 1954.

The **National of Mexico** has ordered 300 70-ton twin-hopper cars from the Magor Car Corporation.

The **New Haven** has ordered three 200-ton transformer cars from its own shops at a cost of $150,000. Delivery is expected about January 1, 1954.

The **St. Louis-San Francisco** has ordered 600 50-ton box cars (of which 500 will be 40½-ft. long and 100 will be 50½-ft. long), from the Pullman-Standard Car Manufacturing Company, at an approximate cost of $4,300,000. Delivery is scheduled to begin in February 1954.

LOCOMOTIVES

The **Louisville & Nashville** has ordered 55 diesel units at an approximate cost of $8,450,000. The American Locomotive Company will build 46 1,600-hp. general-purpose units and two 1,600-hp. road freight units, and the Electro-Motive Division of General Motors Corporation will build seven 1,750-hp. general-purpose units. Delivery is expected during the first quarter of 1954.

PASSENGER CARS

The **Florida East Coast** has received court authorization to purchase four coaches at a unit cost of $171,500, and two sleeping cars costing $194,350 each. The equipment is to be built by the Pullman-Standard Car Manufacturing Company. The two sleeping cars, along with seven similar cars recently ordered by four other railroads (*Railway Age*, October 26, page 36), will operate in "Dixie Flagler" service between Chicago and Miami.

The **Northern Pacific** has ordered two additional sleeping cars from the Pullman-Standard Car Manufacturing Company at an estimated cost of $222,890 each. Delivery is expected in August 1954.

COMMUNICATIONS

Great Northern Begins Two Radio Projects

Road-train radio will be installed along the main line of the Great Northern from Minneapolis to Havre, Mont., 924 miles. The GN also is placing its Hillyard, Wash., yard under radio control, even to walkie-talkie sets for yard clerks and checkers. Equipment for both projects is being supplied by the Bendix Radio division of Bendix Aviation Corporation.

The main-line road-train communications project will, when completed about the first of the year, include receiving and sending equipment at 37 wayside stations; and two-way equipment in each cab of 15 multiple-unit diesel freight locomotives (i.e., 30 sets of equipment), and in 20 cabooses. (*Continued on page* 120)

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The odd shapes and broken lots of LCL shipments can easily be moved in and out of cars, transported and stacked by one man and a YALE Truck. Lift trucks, high and low platform lifts, the "odd-job" Freightmaster are just a few of the many models in the YALE line. Capacities range from 1,000 to 100,000 lbs.... they're available in gas, diesel, electric or gas-electric models.

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"Dynamic Braking saves up to 20 minutes on a single 120-mile run"

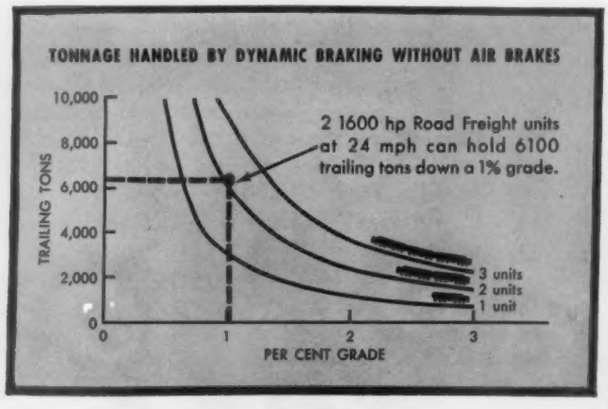
. . . says T. H. Evans, Chief Mechanical Officer, Missouri-Kansas-Texas Lines

"On the Katy," Mr. Evans points out, "we use dynamic braking for speed control—even on flat terrain—to keep our freights moving faster by avoiding delays from automatic brake-release—for holding speeds *up* as well as *down*. This adds up to better service for our shippers, and lowered operating costs for the Katy.

"We instruct our engineers to use dynamic braking wherever possible—particularly on the longer, heavier trains. On some subdivisions we never use air, not even for yard stops. Dynamic braking keeps the cars bunched up well against the locomotive and materially reduces the number of break-in-twos. Since it varies only with the speed of the train, dynamic braking eliminates all other variables in braking any train—including the human element.

"What's more," Mr. Evans adds, "dynamic braking gives us 120,000 miles per wheel before the first turning. We almost never have to replace rigging, and our brake shoe wear is less than 25 per cent of what it used to be. *Alco's dynamic braking is particularly effective—it gives exceptionally flexible application and release and permits higher current rating.* On the Katy, we call dynamic braking 'the engineer's friend.'"

Extremely compact blower-resistor assembly — one of two main dynamic braking components—fits into locomotive roof hatch, out of way of other equipment. Unit dissipates energy from sturdy traction motors faster, more efficiently.



These curves show clearly the outstanding efficiency of dynamic braking on Alco locomotives. They are based upon 1600-hp road freight or passenger units moving at 24 mph with 65 mph gearing and cars averaging 50 tons each.

Alco

AMERICAN LOCOMOTIVE

Alco road freight diesel-electrics with automatically controlled dynamic braking speed service on the KATY

Alco Dynamic Braking Means Faster Schedules Over Any Kind of Terrain

- Alco dynamic braking offers you faster schedules plus speed control over flat terrain—in addition to exceptional braking power on steep grades.
- Alco dynamic braking greatly reduces the need for air braking—even for yard stops or on steep grades. Thus it (1) eliminates delays caused by automatic air-brake releases, (2) reduces costly, time-consuming break-in-twos, (3) eliminates stops to set retainers before descending steep grades, and (4) reduces number of stops required for routine inspection and wheel cooling.
- Peak rating of 900 amperes from traction motors on freight and passenger locomotives in braking operation—not exceeded by any other manufacturer—lets motor run constantly without overheating.
- Alco dynamic braking, besides making possible faster, smoother train handling, reduces chances of derailment through thermally cracked wheels.
- Alco automatic control assures accurate, constant braking effort at all speeds without overloading grids or traction motors.

SUPERIOR ADVANTAGES OF DYNAMIC BRAKING ON ALCO LOCOMOTIVES

. . . . Unmatched heat dissipation on dynamic braking equipment for holding larger tonnages smoothly on heavy grades.

. . . . Faster, more flexibly controlled release and response provide smoother train handling.

. . . . Accurate, constant braking effort *automatically* maintained at correct value without exceeding capacity of braking system.

. . . . Each Alco dynamic braking unit is completely self-contained—dynamic braking equipment in any single unit of a multi-unit locomotive can operate independently of the others, thus providing greater safety.

Superior dynamic braking is but one of the many cost-cutting, efficiency-boosting features that make Alco diesel-electric locomotives *your best buy in motive power.*

VE COMPANY

Sales and Service Offices in New York, Chicago, Cleveland, St. Louis, San Francisco, and Washington, D. C.

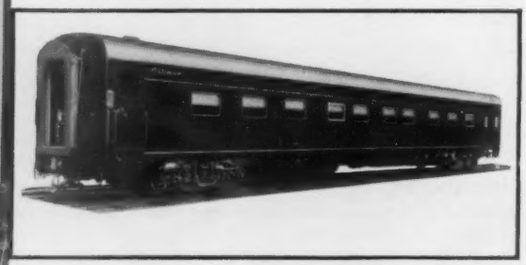
PULLMAN-STANDARD's new Type "S" Room features added comfort of CRANE PLUMBING

Functional design is the keynote of Pullman-Standard's new Type "S" car. Flexibility of floor plan permits accommodations to fit traffic demands of individual railroads.

Here is passenger comfort and convenience unlimited—air conditioning, wall-to-wall carpeting, reclining lounge chairs, non-glare picture windows, and modern Crane plumbing fixtures.

Note in the photo how the vanity's hinged shelf swings down to reveal a glistening white vitreous china Crane lavatory. There's tempered water at your fingertips, and a separate faucet supplies ice water. Lavatory's use completed, the vanity shelf lifts back into position, providing a convenient dressing table with well-lighted triple mirror.

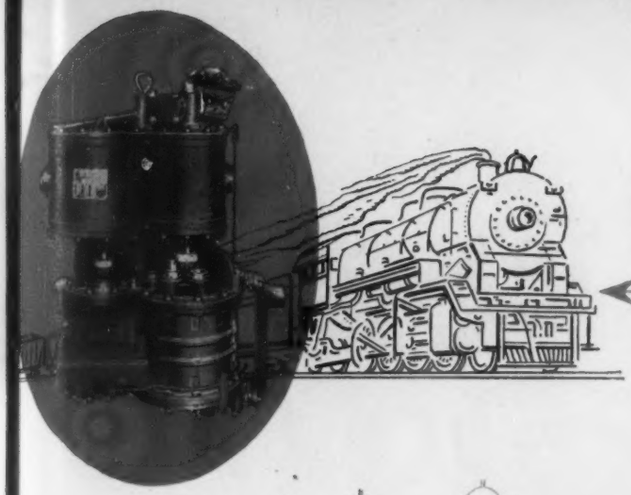
To the modern carbuilder, Crane plumbing offers styling, selection, and serviceability for every plan and purpose . . . and for maximum return on investment, there's no greater assurance than Crane Quality.



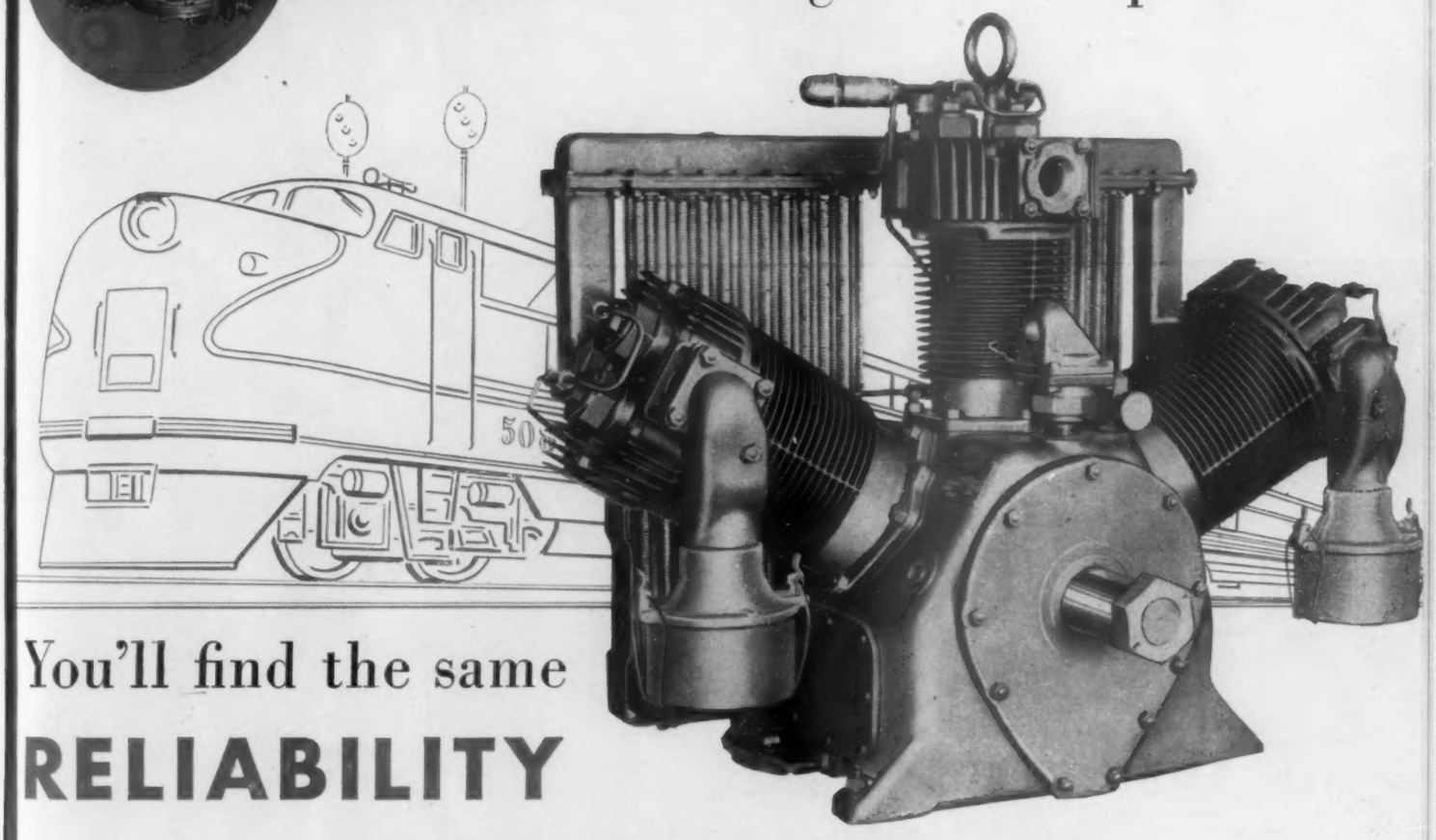
New Type "S" sleeping car, designed and built by Pullman-Standard in collaboration with railroads and passengers.

CRANE CO. GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO 5

VALVES • FITTINGS • PIPE
PLUMBING AND HEATING



You know the DEPENDABILITY OF THIS Westinghouse Compressor



You'll find the same RELIABILITY in the Westinghouse CD Compressor

When it comes to a reputation for dependability—it's hard to beat the one established by Westinghouse steam-driven air compressors. Tens of thousands are still chugging away on the sides of steam locomotives—and each is a guarantee of a positive, dependable air supply.

The same fine engineering that made this compressor such a completely reliable performer is behind the Westinghouse CD Compressor for Diesel service. Every feature that will contribute to dependability, efficiency, and trouble-free service has been included.

These include:

1) Radiator Type Intercooler between high pressure and low pressure cylinders. This reduces the temperature of the discharge air, and boosts efficiency.

2) Full pressure type lubrication system. A constant flow of filtered oil is maintained to connecting rod crankshaft bearings and wrist-pin bearings.

3) Cylinder wall and main crankshaft ball bearings are positively lubricated by a throw-off of oil from connecting rod bearings. Oil pressure relief valve "meters" the oil in accordance with compressor speed.

To give your new Diesel units a completely reliable air supply . . . use Westinghouse CD Compressors.

Westinghouse Air Brake Co.

AIR BRAKE DIVISION

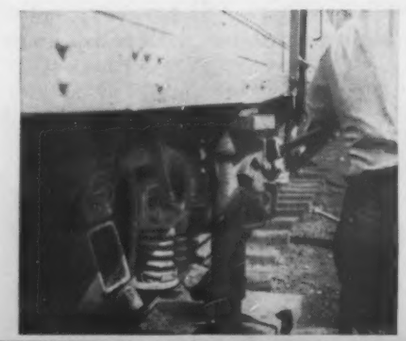
WILMERDING, PA.

Brakes are Basic to Railroad Progress

"ASF 1940" 50-ton test car, shown at Hammonton, N. J., where the short-travel coil springs were replaced with Ride-Control Packages for the return trip to Atlantic City.

Another test car in the train—identical with this car—was mounted on ASF Ride-Control Trucks. Both test cars contained specially designed accelerometers for measuring impacts.

An "operations car," with impact-recording instruments, and two passenger cars were located in such a way as to isolate the two test cars from each other and from undesirable influences of the locomotive.



Eliminating a major cause of lading damage—
in 12 minutes or less!

Jack up the car—remove old AAR coil springs . . .

and slip in the self-contained Ride-Control Package.

Car now has the smooth-riding qualities that are possible *with long spring travel . . . controlled by constant friction.*

You reduce lading damage claims when you reduce the lading damage index... and the Atlantic City test runs prove how

ASF Ride-Control Packages cut lading damage index 90% or more!

The ASF Test Train, on its Atlantic City runs, proved conclusively that railroads no longer have to put up with the costly use of hard-riding freight cars.

We're referring, of course, to cars built before ASF Ride-Control® Trucks were first introduced in 1944; cars good for further service, except for the old 1936 short-travel springs that pound the daylights out of the lading, the roadbed and the car itself.

On a typical test run, the "ASF 1940" test car was mounted on short-travel springs for a 28-mile run. Maximum speed was 56 mph. For the *return* trip, the car ran on ASF Ride-Control Packages—*at speeds up to 84 mph.* Here are the actual test results... comparing the riding qualities of the same car carrying the same load on the same track... *with just one quick change in the springing;*

Impact Count—car outbound with short-travel coil springs

10,908	.25G	4894 x 1	—	4,894
6,014	.50G	3631 x 4	—	14,524
2,383	.75G	1667 x 9	—	15,003
716	1.00G	716 x 16	—	11,456
		Lading Damage Index	—	**45,877**

Impact Count—car inbound with ASF Ride-Control Packages

2,699	.25G	2590 x 1	—	2,590
109	.50G	100 x 4	—	400
9	.75G	7 x 9	—	63
2	1.00G	2 x 16	—	32
		Lading Damage Index	—	**3,085**

In short, lading damage index reduced 93% *—even though the Package-equipped car was run at 84 mph.* Eliminate the harmless .25G impacts, and the reduction is almost 100% ... another way of saying that there's hardly any comparison between the "before and after" riding qualities of the same car!

Prove it on your line...specify Ride-Control Packages for your older cars. Watch claims and car maintenance costs go down, while the number of cars available for unrestricted use goes up! Your ASF Representative can give you complete facts.

Bring your old freight cars up to modern riding standards... with the

ASF

RIDE-CONTROL PACKAGE

AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Look for this MINT ◯ MARK on the running gear you specify

Outstanding benefits of the

Exide-Ironclad

for car-lighting and air-conditioning

Exide-Ironclad—the battery that offers a uniform flow of dependable power to maintain bright, steady lights and comfortable air-conditioned cars.

Exide-Ironclad batteries assure:

AMPLE POWER for entire car-lighting and air-conditioning loads . . . uniform voltage at proper values throughout run.

STEADY LIGHT AND COOL CARS even during long stops.

UNINTERRUPTED SERVICE—can be changed or recharged in yard—withstand vibration, shock, service variations and temperature differences.

LOW OPERATING, MAINTENANCE and DEPRECIATION COSTS.

Exide-Ironclad batteries meet all requirements of car design and electrical loads.

DEPENDABLE POWER

YOUR BEST BATTERY BUY AT ANY PRICE

Here's the Inside Story of the EXIDE-IRONCLAD Battery

Inside . . . where it counts most . . . Exide-Ironclad is entirely different from any other battery. It's made that way by the exclusive IRONCLAD slotted tube construction . . . a principle that provides direct operating-hour savings for you.

POSITIVE PLATE SPINES cast with the heavy top bars are of SILVIUM, which resists corrosion . . . contributing to longer battery life.

SLOTTED TUBES retain active material in contact with spines, yet permit the electrolyte to penetrate throughout the active material.

POLYETHYLENE TUBE SEALER. This acid-proof plastic sealer fits snugly into the bottom of positive plate tubes, sealing in the active material for a longer working life.

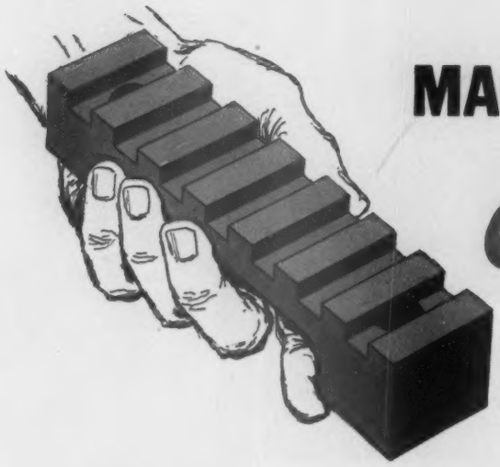
1888 . . . DEPENDABLE BATTERIES FOR 65 YEARS . . . 1953

THE ELECTRIC STORAGE BATTERY CO., Phila. 2 • *Exide Batteries of Canada, Limited, Toronto*

HOMOGENEOUS SEALING COMPOUND resists shock, without cracking, at high or low temperatures. Forms a permanent seal between container and cover.

NEW QUARTER-TURN PLASTIC VENT PLUGS. Made of unbreakable polyethylene. Can be quickly and easily removed to add water.

Exide-Ironclad batteries in a wide variety of types and sizes are also available for diesel starting and for battery-electric trucks.



MAGNUS R-S JOURNAL STOP eliminates biggest

This new development prevents excessive axle displacement under braking and impact forces—eliminates waste grabs, adds life to bearings, keeps packing in place, and cuts down man hours for car servicing.

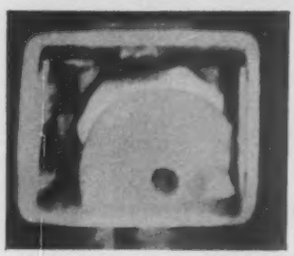
From a purely mechanical standpoint — what's the biggest single cause of hot boxes? The answer is truck design — loose, nominal-dimension construction that permits virtually unrestricted axle movement fore and aft within the journal box. The result: whenever there's a heavy brake application, or a heavy impact during road or switching operations, the axle rolls right out from under the bearing — cocks both bearing and wedge out of position. The packing is displaced, too — often gets trapped under the bearing crown. And linings are spread because of the concentrated uneven loading.

The new Magnus R-S Journal Stops for standard integral cast boxes prevent all that — virtually eliminate waste grabs and spread linings due to concentrated loading. Made of bronze bearing metal, they keep the bearing and wedge in place *under all conditions,* let the bearing take the load in the crown where it should. If you put the bearings in right, they stay right. Journal Stops keep the packing in place, too. Can cut down time-consuming adjustment at servicing points — may speed up departure times.

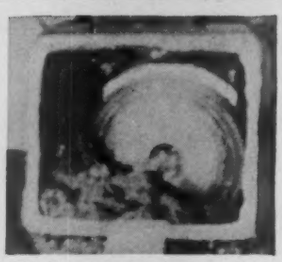
R-S Journal Stops have been in test service for more than a year and a half. During that time there has been only slight wear on the Journal Stops and *there have been no hot boxes!* All bearings removed for inspection after 18 months were returned to service. In addition, it was found that there was substantially less than normal wheel flange wear, and the wear uniform on all wheels. This could mean very important savings in terms of extended wheel life alone.

Be sure to get your free copy of our Bulletin 1002 describing the new Magnus R-S Journal Stop and Packing Retainer. Just write a post card or letter to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 East Jackson Blvd., Chicago 4.

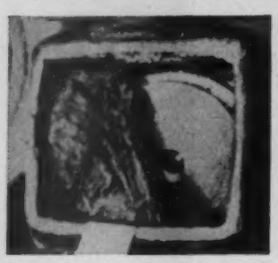
This CAN'T HAPPEN when you use the R-S Journal Stop



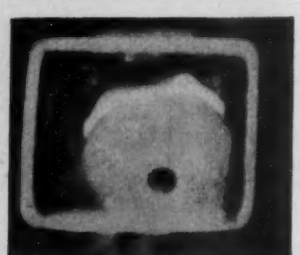
High-speed photo showing axle and bearing displacement at 11.5 mph impact.



Still shot shows packing condition after 450 mile run with no switching or humping involved.



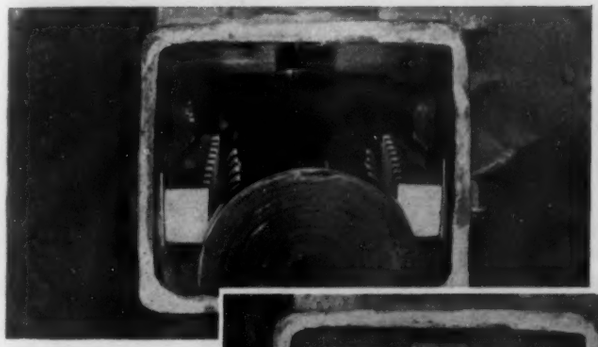
Another example of displaced packing after 450 mile run.

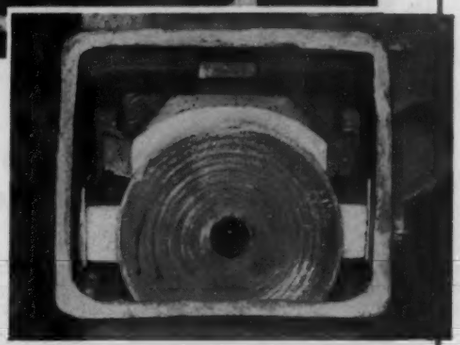


High-speed photo of incipient waste grab at impact of 7.7 mph.

and PACKING RETAINER

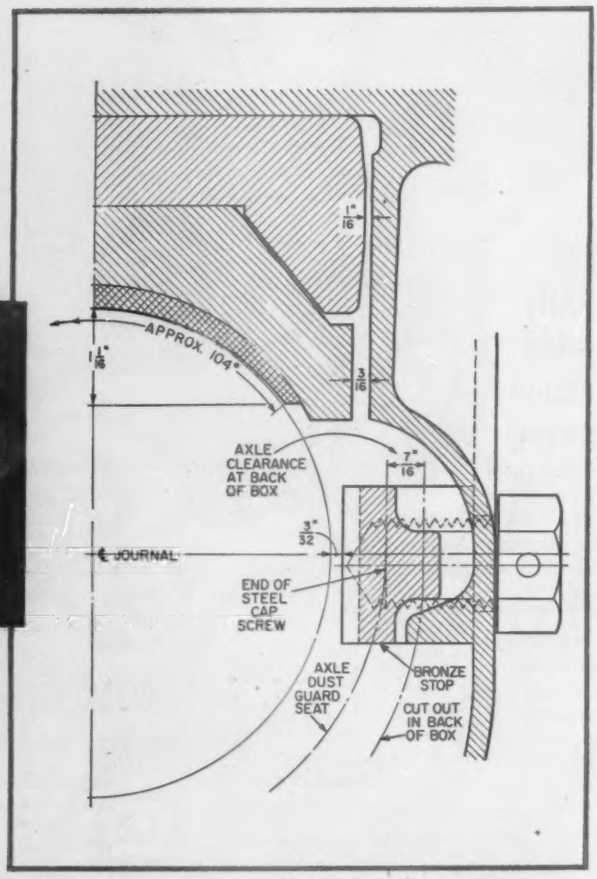
single cause of hot boxes!





Above: Jacked journal box with packing, bearing and wedge removed, showing mounting of Journal Stops on inside walls of box.

Right: Journal box with wedge and bearing in place (no packing), showing Journal Stops and car journal in operating position.

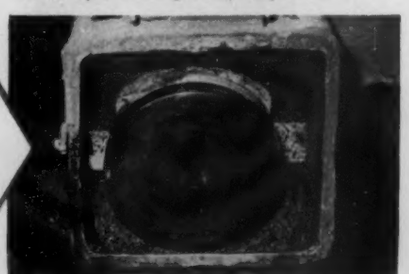


Cross-section of Magnus R-S Journal Stop as applied to 5½-in. x 10-in. journals. Regardless of journal size, the bronze journal stop is 2½-in. shorter than journal length. Bearing and wedge can be taken out for inspection without removing Journal Stops. Only one Journal Stop need be removed from each box to remove side frames.

NO STOPS

Here's what happened to the packing in a journal box after flat-switching impact at 11½ mph. Packing badly displaced.

WITH STOPS



Here's a box on the same car fitted with Journal Stops after undergoing same 11½ mph impact test. Packing is still in its proper position.

MAGNUS

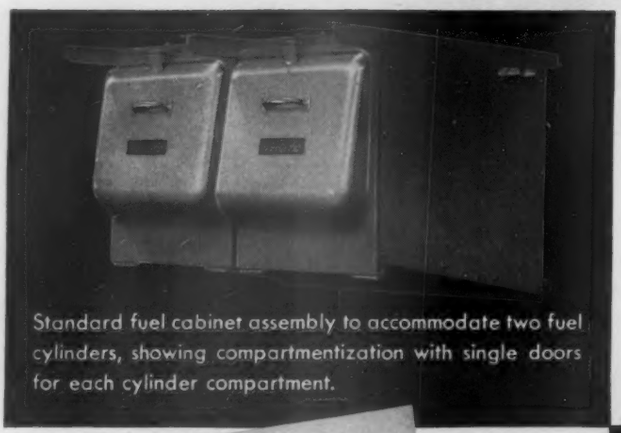
Solid Bearings

Right for Railroads

...in performance...in cost

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

SAVE money and time with WAUKESHA PROPANE FUEL SUPPLY SYSTEM



Standard fuel cabinet assembly to accommodate two fuel cylinders, showing compartmentization with single doors for each cylinder compartment.

Automatic and Safe for

Waukesha Ice Engines
Engine Generator units
Dining car ranges
Business car ranges
Switch heating
Cafe car grills
Refrigeration units
Hot water heating
Car heating
Cooking services in maintenance of way cars

Chicago and North Western Ry.
Illinois Central Railroad
Missouri Pacific Railroad
Texas & Pacific Railway
Canadian Pacific Railway
Chicago Milwaukee St. Paul & Pacific RR.
Chicago Rock Island & Pacific RR.
Minneapolis St. Paul & Sault Ste. Marie RR.
St. Louis-San Francisco Railway
Southern Pacific Company
Union Pacific Railroad
Chicago St. Paul Minneapolis & Omaha Ry.
Northern Pacific Railway
Texas and New Orleans Railroad
Gulf Mobile & Ohio Railroad
Southern Pacific of Mexico
The Pullman Company
Chicago Burlington & Quincy RR.
Denver & Rio Grande Western RR.
Minneapolis & St. Louis Ry.
Chesapeake & Ohio Ry.
Kansas City Southern Ry.
Seaboard Air Line Railroad
National Railways of Mexico
Great Northern Railway
St. Louis Southwestern Railway
Western Pacific Railroad
Atchison Topeka & Santa Fe Ry.
Chicago Indianapolis & Louisville Ry.
Missouri-Kansas-Texas Lines
Chicago South Shore and South Bend RR.
Chicago & Eastern Illinois RR.
Spokane Portland & Seattle Ry.
Pullman-Standard Car Mfg. Co.
Bessemer & Lake Erie Railroad
Duluth, Missabe & Iron Range Ry.
Fort Worth & Denver City Ry.
Chicago Great Western Railway
Nashville Chattanooga & St. Louis Ry.
Toledo Peoria & Western RR.
Clinchfield Railroad
Reading Company
Canadian National Railways
Erie Railroad
Gulf Colorado & Santa Fe Ry.
Minneapolis, Northfield and Southern Ry.
International Railway Car Co.

Ask these users

Send for literature

Standard fuel cabinet assembly to accommodate two fuel cylinders, showing one cylinder in place together with fuel manifold and controls. The tubular supporting cradle is shown with heater accessories for train line steam heat.

● **Built as a basic unit which may be assembled to hold one to six cylinders, in individual compartments, the Waukesha Propane Fuel Cabinet is fabricated steel, with individual doors for each cylinder section. A tubular cradle with a spring-loaded self-locking shoe holds each cylinder securely. Cabinet contains piping with manual shut-off, and automatic pressure regulators for sequence unloading of cylinders.**

100 lb. of Propane will produce: operating an engine-generator unit, 100 KW hrs.—operating a gas engine, 162 hp. hrs.—operating a Waukesha Ice Engine, the equivalent of 10,000 lb. of ice.

Cylinders are available from several makers to meet Waukesha specifications and constructed to ICC and Bureau of Explosives requirements. When used with Waukesha Propane system, entire system has AAR approval.

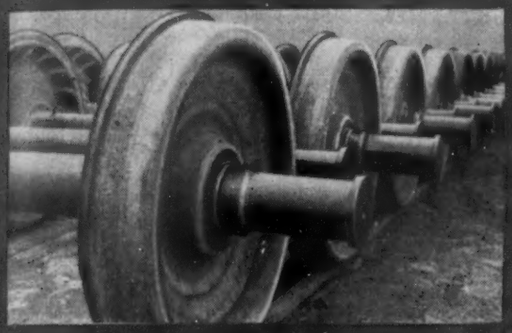
RAILWAY DIVISION

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.

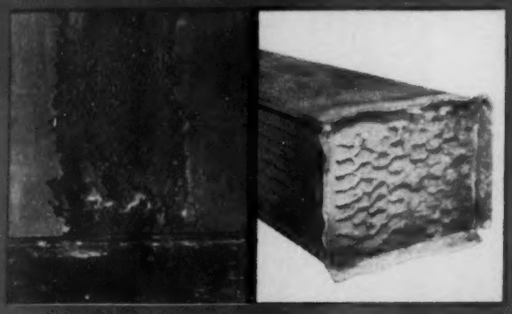
226

Largest Builders of mobile engine-driven Refrigeration and Generator Equipment

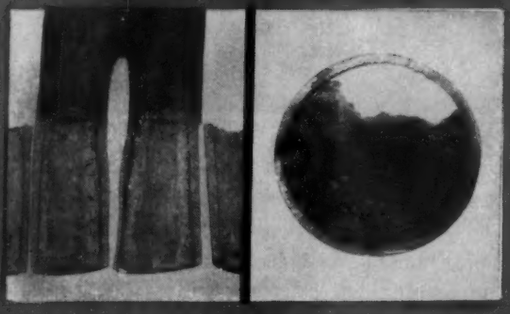
ON THE RAILROAD



KEEPS CAR JOURNALS READY FOR USE



PREVENTS CORROSION IN COOLING SYSTEMS



ELIMINATE SCALE—AVOID SHUTDOWNS

WRITE FOR INFORMATION

A series of bulletins on Dearborn cleaners, rust preventives, cooling water treatment and scale removal, is available to you.

USE THE COUPON

Dearborn NO-OX-ID "400"

Here's the protection you've wanted for car journals. Dearborn's NO-OX-ID "400"—the easy-to-apply, wax-type film—will not run, sag or alligator in hot weather...will not crack even at 60° below zero. Removed quickly by solvents or steam.

Dearborn FORMULA 527

Dearborn's FORMULA 527...is the new Non-Chromate Cooling Water Treatment that prevents corrosion on all cooling system metal parts—including aluminum. Does not irritate the skin; safe to use with antifreeze solutions.

FORMULA 527 TEST KIT. Water treated with Formula 527 may be tested with Dearborn 527 colorimetric Test Kit or Dearborn Concentrometer and Solu-Bridges.

Dearborn FORMULA 134

Wherever water travels, scale tends to form. Dearborn Formula 134, a concentrated solvent, safely removes the scale in heat exchange units, boilers, pumps, feed lines, meters, condensers and other valuable equipment—reduces shutdown time and maintenance costs.

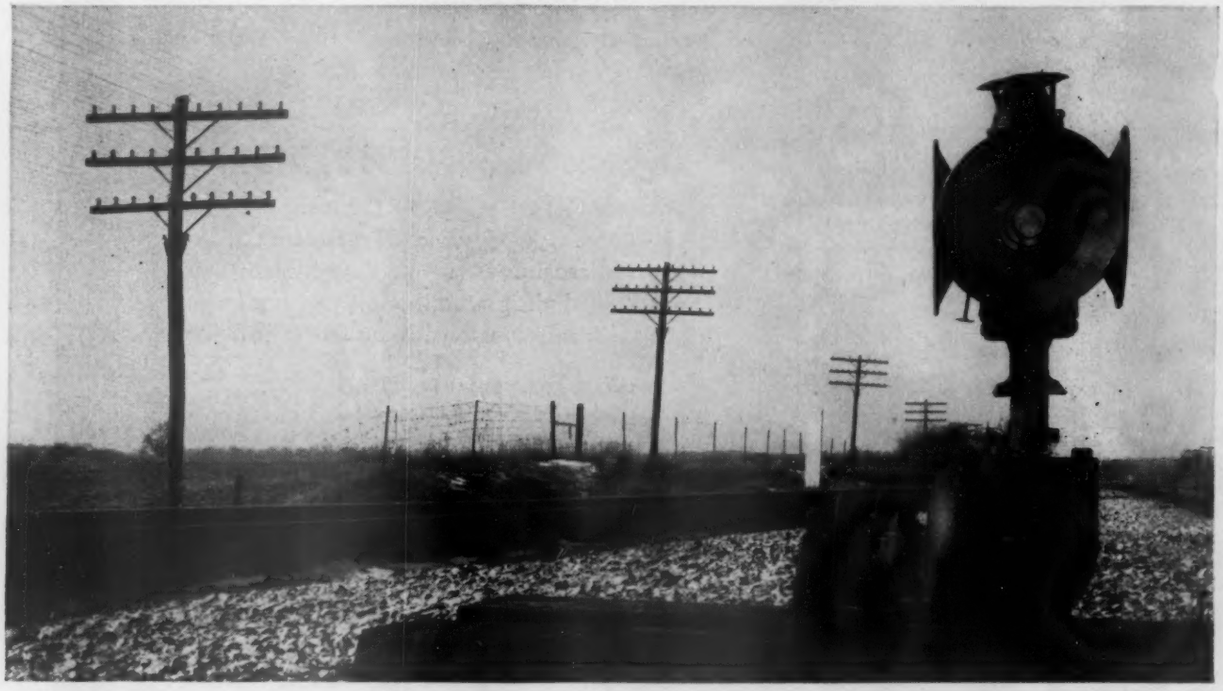
Dearborn Chemical Company **Dept. RA**
Merchandise Mart Plaza—Chicago 54, Illinois
Please send me
- ☐ Bulletin No. 6000 on railroad cleaners
- ☐ Information on NO-OX-ID "400"
- ☐ Bulletin No. 5014 on Formula 527
- ☐ Bulletin No. 5002 on Formula 134
- ☐ Have a Dearborn Engineer call

Name.....
Railroad.....
Position.....
Address.....
City.....*Zone*....*State*.....

DOW

DEPENDABLE COMMUNICATION STARTS WITH PENTA PROTECTION

Poles and crossarms treated with clean PENTA give many "extra" years of trouble-free service



The Dow Chemical Company
Dept. PE 3-3A6, Midland, Michigan

I am interested in PENTA for:_____

☐ Send me free booklet, "Pointers on PENTA".

☐ Send me list of PENTA treating plants.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

There is good reason why leading railroads are specifying more PENTA*-treated poles and crossarms than ever before.

Plus giving positive protection against decay and termite damage, PENTA is a preservative that gives a truly clean treatment. PENTA-treated poles and crossarms are easy-to-handle.

Year in, year out, PENTA-treated poles and crossarms stand up to the most severe weather conditions. They can be counted on to do their part in assuring dependable communications all along the line.

Over 60 suppliers across the nation can furnish you with PENTA-treated poles. Be sure to ask your regular supplier about *clean* *PENTAchlorophenol or write direct to THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

Around-the-clock DEPENDABILITY

Coaling engines around-the-clock seven days a week, week in, week out is a tough assignment. But that's the work schedule delivered the year around by this dependable American DiesElectric Locomotive Crane for its owners, the Milwaukee Road.

This is just one of hundreds of American DiesElectric Locomotive Cranes that solve materials handling jobs for their owners every day, quickly, economically. You'll find these cranes in almost every industry . . . steel, mining, pulp and paper, construction and industrial plants of all kinds.

Fast, smooth-operating American DiesElectric Locomotive Cranes with diesel power to the deck, electric power to the trucks require a minimum of maintenance. In fact, detailed cost and operating records prove an American DiesElectric Locomotive Crane *will write off its cost fully in five short years!*

Does your company have a materials handling problem? Our specialists are at your service! Write or call today!

Modernize...economize...with

American Hoist

AMERICAN HOIST & DERRICK CO. • ST. PAUL 1, MINN.

For the BIG PRODUCTION jobs of industry...

AMERICAN LOCOMOTIVE CRANES

HERE'S A "Made-to-Order" Job FOR UNIONMELT WELDING

Installing nailable steel flooring in gondolas and other cars can be done at high speed and low cost using the automatic UNIONMELT method. Welding in all of the flooring of 200 gondolas at the rate of *one car an hour* was recently achieved by a Midwestern railroad. They used two UNIONMELT heads, one on each side of the car, to weld the hold down bars to the side sill and with a second pass to weld the bars to the new steel floor members.

This new use for the automatic UNIONMELT welding method is just one more added to the long list of money-saving applications for car repairs and construction.

Why don't you get more information on how UNIONMELT welding can speed operations and cut costs in your shops. Write for booklet 7767 — "New Railway Car-Building and Repair-Shop Methods."

OXWELD RAILROAD SERVICE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

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RDC GETS AROUND
ON THE
CANADIAN PACIFIC

It would be hard to find a more dramatic illustration of RDC's versatility than the uses to which the Canadian Pacific is assigning the four RDCs they have just purchased.

One service is conventional—fast passenger runs between Toronto, London, Windsor and Detroit.

Another penetrates the rugged country between North Bay and Angliers, serving rich mining and forest resources.

And a third will provide service between Montreal and Mont Laurier in the Laurentian resort area.

Quite a contrast from the sugar plantations of Cuba and the Australian desert, both of which know RDC. And it further confirms this fact: You name it—RDC does it. Does it better. Does it at much lower cost. The Budd Company, Phila. 15.

Budd

RDC BRINGS THEM BACK TO THE RAILS

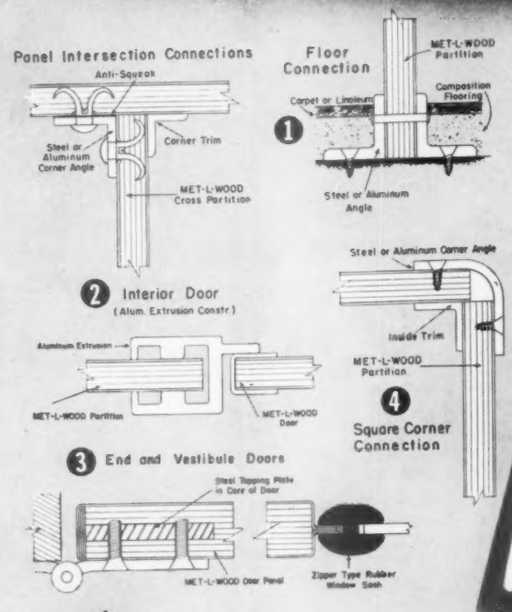
MET-L-WOOD
METAL BONDED TO PLYWOOD

VERSATILITY

FOR MODERN CAR INTERIORS

Met-L-Wood walls provide a smooth, luxurious finish in addition to saving weight and simplifying construction.

MET-L-WOOD passenger car partitions, doors and paneling not only produce beautiful finished surfaces, but can also save up to 73%* in weight and a substantial amount of construction time. Shown at left, and described below are typical Met-L-Wood construction details. Full information on Met-L-Wood versatility in new or rebuilt cars will be furnished promptly on request. Write today.



1 Panel intersections with Met-L-Wood can be made invisible from outside with the use of split rivets. Floor connections may be made in a variety of ways, one of which is shown here, using through-rivets and metal screws.

2 Interior doors of Met-L-Wood can be fitted with aluminum extrusion door stops; or the Met-L-Wood partition formed so that the door stop is an integral part of the panel.

3 Steel tapping plate inserts can be put in Met-L-Wood doors at proper places for solidly anchoring hinges and door-opening devices. Note simplicity of using zipper-type window sash with pre-formed Met-L-Wood window openings.

4 Square or rounded corners are made with Met-L-Wood panels and steel or aluminum corner forms. Corner forms can also be fastened with split rivets or through-rivets, as well as with wood or metal screws.

Met-L-Wood panels 3/8" thick, with steel both sides, have a stiffness factor exceeding that of 1/4" solid steel plate, while weighing only 27% as much as steel!

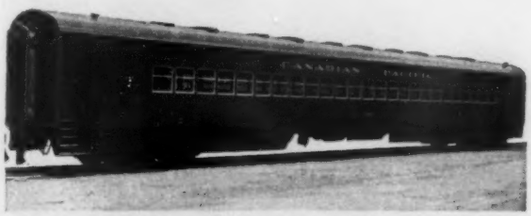
MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

MET-L-WOOD • *STRONG... LIGHT... Smooth Finish... Sound Deadening... Fire-Resisting... Insulating*

Interior view of one of forty new Canadian Pacific commuter cars built by Canadian Car and Foundry and now in service on the suburban Montreal run.

Comfort for the Commuter . . . Efficiency for the Railroad



The Heywood-Wakefield Plant in Orillia, Ontario, Canada

Another Custom-Built Heywood-Wakefield Installation for the Canadian Pacific Railway

Engineered and built in our Canadian plant for Canadian Pacific's forty new commuter cars, these custom-built rotating seats demonstrate Heywood-Wakefield's ability to solve unique problems confronting railroads and car builders. The flexibility of Heywood-Wakefield design and manufacturing operation permits us to install any type of railway car seat necessary.

Our deluxe leg-rest seats will soon be installed on the transcontinental trains of the Canadian Pacific . . . in 1954 our regular coach seats will be delivered for some of the new Canadian National trains. The particular seating problems of *your* railroad are also our concern.

HEYWOOD-WAKEFIELD
EST. 1826

Transportation Seating Division
Gardner, Mass.
Orillia, Ontario, Canada

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Saved! Over $450.00 a mile a year on track maintenance

THIS WAY

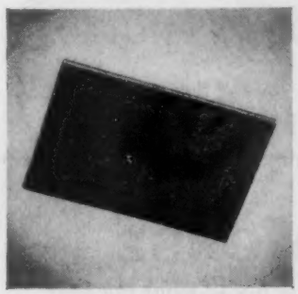
BY PREVENTING THIS

The "how" of such outstanding savings is the tough, resilient abaca fibre tie pad compounded with BAKELITE Vinyl Resins. According to the manufacturer, eight years of use showed that these pads reduced tie replacements by an estimated 30%, the costs of track tamping and track gauging by 20% and 50% respectively. By conservative estimate, this is a net saving of at least $452.30 per mile, per year!

These rugged tie pads are made of wiry abaca fibres impregnated with BAKELITE Vinyl Resins. The elastomeric resins used make the pad hug the tie surface, grip the spikes as they're driven through! So tight is this bond, it seals out destructive moisture, sand and cinders . . . even makes it possible to use smaller tie plates! The pad is completely resilient—absorbing within itself the cutting, pounding pressures of tie plates. It gives longer life to regular and insulated joints . . . greatly reduces rail end batter.

Tie pads made with BAKELITE Vinyl Resins are highly resistant to oxidation, sunlight, brine, oil, acids, most solvents, alkali, insects and vermin. They do not become brittle in severe cold, nor flow in extreme heat. For details on these tie pads, write F. Burkart Mfg. Co., St. Louis 7, Mo. or, for information on other applications of BAKELITE Vinyl Resins and Plastics, direct your inquiry to Dept. RE-73. Ask for the booklet "VINYLITE Resins and Plastics —Their Forms, Properties, Applications."

Data courtesy **F. Burkart Manufacturing Company**, St. Louis 7, Mo.



The wiry abaca fibres, embedded in BAKELITE Vinyl Resins, run at random — lengthwise, crosswise and diagonally—for uniform strength in *all* directions. There is no grain to permit delamination.

BAKELITE
TRADE-MARK
VINYL RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.

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Fairbanks-Morse Train Master demonstrates motive power versatility with heavy tonnage on a three-percent Santa Fe grade.

THE FAIRBANKS–MORSE

TRAIN MASTER

...the most useful locomotive ever built

proved

FAIRBANKS-MORSE

a name worth remembering when you want the best

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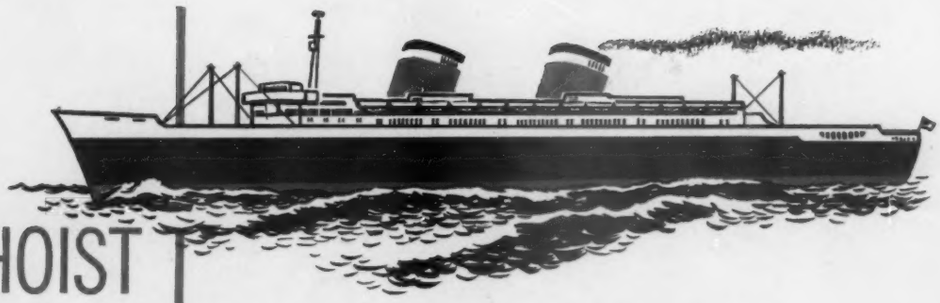


BROWNHOIST

CRANES help build the S.S. United States and other big ships for Newport News Shipbuilding and Drydock Co.

One of the largest shipbuilding and ship repair yards in the world, Newport News Shipbuilding and Drydock Co., designed and built the huge luxury liner, S. S. United States. They also build, convert and repair naval and merchant vessels of all types. For the many difficult materials handling operations this work entails, they need efficient and dependable equipment. That's why this company maintains a fleet of modern Brownhoist Diesel Electric Locomotive-Cranes.

Brownhoist Cranes perform equally well as switch engines or cranes operating with magnet, hook or bucket. Monitor Type Cab and Clear-Vision Boom give the operator full 360° visibility. Rugged construction, simplified mechanism, and easy accessibility to all moving parts help keep maintenance and repair costs low. In railroads, steel mills, mines and large manufacturing plants, Brownhoist Cranes are saving production time and money. They are built in capacities from 25 to 80 tons for virtually every materials handling operation. For complete information, consult your nearest Brownhoist representative or write us today.

BROWNHOIST
builds better cranes

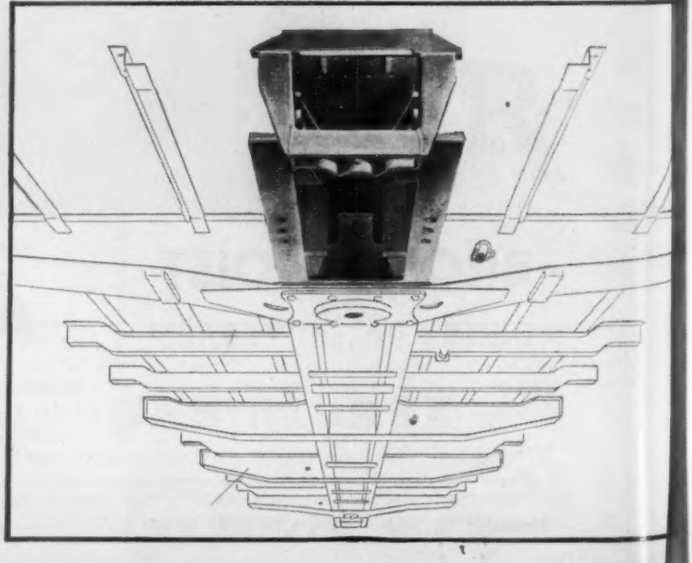
172

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN

DISTRICT OFFICES: New York, Philadelphia, Cleveland, San Francisco, Chicago; Canadian Brownhoist, Ltd., Montreal • **AGENCIES:** Detroit, Birmingham, Houston, Los Angeles

STALKING A TROUBLE-MAKER IN THE SWITCH YARDS

Traveling over 100,000 miles a year to find out what happens to box cars on the line is the job of Pullman-Standard Sales and Service Engineers. Here they are getting facts on impact, facts that prove the quality of PS-1 construction. But they also observe maintenance problems involving box cars that eventually become improvements in the PS-1. Pullman-Standard design is continually improving because research begins on the line.



THE WELDED DRAFT SILL ASSEMBLY

Pullman-Standard welded bolster center fillers, draft lugs, and strikers are permanently tight. This is just one of the many results derived by combining "on-line" engineering with research and development . . . one of the many reasons why the time-proved, road-proved PS-1 is winning such wide acceptance by so many railroads.

Research begins on the line

FIELD DATA PROVIDE THE ESSENTIAL OPERATING FACTS THAT HELP IMPROVE THE PS-1

Freight car operations offer a thousand variables. And it's the job of Pullman-Standard Sales and Service Engineers to find out what they are, because the PS-1 has to *perform efficiently all the time.* Engineering that started in the field has made the sturdy PS-1 an outstanding freight car. This kind of research is constant, which is why the PS-1 is continually being improved—why it is always the best buy. "On-line" research plus exhaustive tests at Pullman-Standard Research and Development Laboratories mean that the specifications for the standardized PS-1 are never "frozen."

For instance, the all-welded draft sill and bolster center filler assembly resulted from the continued effort to develop a stronger more unified construction. It's now a part of the PS-1 that railroads don't have to worry about. This is just one of many examples of what makes the PS-1 a better box car . . . and how mass production techniques have been applied to build a quality box car to fulfill railroad needs. Ask for the fast delivery schedule of the record-breaking PS-1.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

THE PROOF IS IN YOUR OWN YARD

Look at any freight consist and count the number of PS-1s. Here is proof that the standardized box car is the best answer to the rising costs of today's freight operations. The sturdy PS-1 is being bought and reordered by a majority of the country's leading railroads—proof that quality as well as quantity lead to the selection of a box car designed for long service life.

GETTING THE GOODS ON A CAR KILLER

Operation impact! A planned collision to see how the standardized PS-1 takes it. The all-welded hopper car is fully loaded as it comes down the ramp to smash into the PS-1. Speeds as high as 12 mph are obtained in order to get the data that make the PS-1 a better and better box car. This scene is a familiar one at Pullman-Standard's Research and Development Laboratories.

One of 550 Gondolas . . . built for Chicago, St. Paul, Minneapolis and Omaha Railway Company . . . with side plates of Bethlehem Steel Company's *Mayari R*, a high strength low alloy steel containing nickel. *Mayari R* is used for side plates in a gondola body because these are usually subject to greatest punishment.

Aiming for 20-year car life?

Try a steel that resists corrosion, combats battering and piercing, shock and abrasion

500 New 50-Ton Hopper Cars . . . similar to the all-welded type shown here . . . were recently built for the Delaware, Lackawanna and Western Railroad. All plates that come in contact with the coal load are of Bethlehem Steel Company's *Mayari R*. This high strength low alloy steel containing nickel provides increased resistance to corrosion, battering and piercing, as well as to shock and abrasion.

Aim for 20 to 24 years of car life . . .

Aim for minimum maintenance and maximum use per dollar invested . . .

Utilize high strength low alloy steels containing nickel. Records show, for example, that steel of this type gave virtually double the life obtained from carbon steel of the same thickness under identical conditions in coal-carrying hopper cars . . . where hard usage and, particularly, corrosion, pose major maintenance problems.

Along with resistance to corrosion, nickel-containing high strength low alloy steels *combine qualities such as ability to withstand shocks, battering and piercing, as well as abrasion.* In addition, this type shows excellent response to forming and welding.

Moderate in cost, and produced under various trade names by leading steel companies, high strength low alloy steels containing nickel along with other alloying elements are especially suited to minimize maintenance labor and expense in railroad applications.

Consult us on the use of these steels in your products or equipment. Write today.

290 Class X41 Box Cars . . . built for the Pennsylvania Railroad . . . utilized Bethlehem Steel Company's nickel-alloyed *Mayari R* for various parts. These 50' automobile-type cars weigh 1.36 lbs. less per cu. ft. of capacity than those previously built of carbon steel. Use of *Mayari R* cut deadweight 6730 lbs. per car, or a total of 975 tons in the 290 cars.

INCO

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

Railroads—

Koppers can help you with your wood problems

AMERICAN railroads have saved thousands of dollars in recent years by pressure treating their ties, trestles, right-of-way fence posts, etc. There is no reason, then, why still further savings cannot be realized by extending pressure treatment to other railroad uses of wood.

If your wood-use problem involves decay, steam sterilization, acid damage, weathering, abrasion, termite attack, or dimensional stability, or other causes of wood deterioration, we can help you reduce replacement and maintenance costs. Perhaps one of our new preservative developments, such as KP Resin is the money-saving solution to your wood problem. Before paying high labor and material costs, consult our Technical Department about your problems. They will welcome the opportunity to help you find a solution.

KOPPERS **PRESSURE-TREATED WOOD**

KOPPERS COMPANY, INC. **Wood Preserving Division**
Pittsburgh 19, Pennsylvania

Letters from Readers

More About "Piggy Back"

NEW BERN, N.C.

TO THE EDITOR:

Considerable interest is being displayed by railroad men and truck operators in the "piggy back" service of transporting semitrailers on railroad flat cars.

It appears from articles I have read that the general idea is to transport these trailers for the trucking companies at a rate sufficiently low to attract this traffic from the highways to the rails. If the railroads go into this service they will be making a serious mistake.

The public is becoming more and more conscious of the damage being done to our highways by large trucks, and is becoming more disgusted with the congestion on the highways and city streets caused by large trucks. As time passes, the public will eventually voice disapproval of more taxes that will be required to rebuild highways damaged by heavy truck operations. Labor unions are organizing the truck drivers, resulting in increased wage costs, so all these things will eventually increase the operating costs of truck lines to where they will have to increase their rates to the same level as, or above, rail rates. The result will be a return to the rails of a large volume of traffic the trucks are now handling.

Now if the railroads come to the truckers' rescue and relieve them of many of these costly problems the railroads will be saving their worst and most effective competitors and will very materially assist them in taking more high class traffic from the railroads.

There will be many instances in the proposed "piggy back" service in which a train will have several flat cars loaded with trailers containing first class merchandise handled at a very low rate by the railroad and in the same train will be box cars loaded with first class merchandise being handled at first class rail freight rates. This will be a serious discrimination against the shipper using the rail service that will eventually drive all this traffic to the trucks in "piggy back" service where they will be handling the same traffic at a very low rate.

The "piggy back" service offers the very best means the railroads have for getting back millions of tons of traffic they have lost to the trucks. But the railroads should operate this service 100 per cent for themselves and get 100 per cent of the revenue. Where the railroads now have pick-up and delivery service they should add a sufficient number of tractor-trucks to handle these semi-trailers to the plant of the shipper for loading, move it to the station, and place it on the flat

car for movement to its destination. On arrival there, the railroads should move this trailer to the consignee's place of business with their own trucks.

It would not be necessary for the railroads to acquire certificates of convenience and necessity to operate this service as they are now performing this same service in pick-up and delivery on their l.c.l. traffic.

I repeat that this is a wonderful opportunity to win back an enormous volume of traffic to the railroads. The railroads will make a terrible mistake if they haul these semi-trailers for the truck lines.

H. P. EDWARDS
Chairman of Board
and General Manager
Atlantic & East Carolina

•

Renovate Rates First

TO THE EDITOR:

I have followed with interest recent articles, editorials and expressions of views of shippers and a few railroad representatives in connection with so-called "piggy back" service. I have never seen an innovation in transportation receive such rapid public acclaim. It seems that everyone will be made happy. It is predicted that highway congestion will be relieved, truck companies will make more money, rail traffic will increase, and there will be more jobs for train crews.

If the views of this writer are correct, truck drivers also should be happy, because if "piggy back" operations are conducted on a large scale, a substantial volume of carload traffic will be diverted to truck trailers and more drivers will be required for terminal operations than are now employed in over-the-road service. Even a few railroad executives seem to think the millennium is just around the corner. However, in what almost amounts to mass hysteria I have not yet seen a down-to-earth analysis of the effect of "piggy back" operations on rail rates and revenues.

Consider for a moment the operation between New York and Boston. Rates range between $58.24 for a 26-ft. trailer with maximum lading of 32,500 lb. and $63.88 for a 36-ft. trailer with maximum lading of 35,000 lb., producing car-mile revenue ranging between 28.1 and 30.9 cents. In 1950 the average car-mile revenue of the railroad was 63.3 cents. Of course, special equipment could be provided to handle two trailers with net weight of 70,000 lb., thus doubling the car-mile earnings. However, these cars would cost approximately $14,000 as compared with a $5,500 box car with capacity of 80,000 lb. or more.

Trailers may be loaded with single or mixed commodities, including perishables moving under mechanical re-

(Continued on page 57)

FULLY TESTED
HOT-BOX
PREVENTION

NOW AVAILABLE

PLYPAK
WASTE CONTAINER & RETAINER

TEST REPORT FROM RAILWAY AGE
May 4, 1953

The Plypak packing container was also subjected to extensive laboratory tests under which it demonstrated that it should produce considerable benefits in reducing hot boxes. Based on these laboratory tests, 3,000 70-ton hopper cars have been equipped with Plypaks. Experience to date has justified our confidence in the ability of this device to reduce hot boxes. From April 1952 through January 1953 the average percentage of our 70-ton hopper cars equipped with Plypaks has been 2.94, yet these cars have accounted for only 0.77 per cent of the hot boxes on 70-ton hopper cars. In other words, in the same service, cars without Plypaks account for approximately four times as many hot boxes per car as do cars equipped with Plypaks.

COULD YOU ASK FOR BETTER PROOF OF HOT-BOX REDUCTION?

Hot-Boxes, due to lubrication failures, which occur so frequently in high-speed freight operation, can now be materially reduced.

Journal Lubrication has been the subject of years of research and testing in an endeavor to find a means of providing positive lubrication under all operating conditions.

This study resulted in the development of a new type waste-container and retainer, PLYPAK, which has been fully proven in more than three years of rigid service-testing. PLYPAK holds waste firmly and keeps it oil soaked with pumping action, performing this needed function without creating additional hazard. The resilient PLYPAK is an essential aid to proper lubrication.

To minimize hot-box hazards from lubrication failures, protect all journal packing with PLYPAK waste retainers.

Your inquiry is invited.

WAUGH EQUIPMENT COMPANY

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

CHICAGO — ST. LOUIS — CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL

Provides twice as much paint in one application . . . Increases paint shop capacity . . . Keeps equipment on the haul for more pay hours

YOU'LL get more pay hours from your freight rolling stock when you paint them with Pittsburgh's Hot-Spray CARHIDE. This latest development in famous CARHIDE railway finishes provides the equivalent of *two coats of paint applied cold with a single application* . . . puts cars into service more quickly . . . keeps them looking better longer.

● **In Hot-Spray CARHIDE,** heat is used in place of conventional thinners to adjust viscosity to weather and temperature conditions. No matter when you paint, this new type of coating goes on more uniformly, has better adhesion, dries quickly to a higher gloss, and gives you tougher, longer-lasting protection.

● **Hot-Spray CARHIDE** can be applied with approximately half the usual air pressure. This reduces the amount of "fog" in the paint shop—more of the solid material reaches the surface being painted. There is less paint sag—more paint is applied with less labor. As there is much less thinner to evaporate from the paint, imperfections from shrinkage are greatly decreased.

● **Refinishing is speeded** as half the time needed to apply two coats, as well as drying time between coats, is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.

● **We'll be glad** to give you further details about this new labor-saving freight car paint. A wire, phone call or letter from you may save time and money in your shop, traffic and operating departments.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

(Continued from page 54)
frigeration, and for handling this type of traffic the "piggy back" rates range between 8.5 and 9.4 per cent of first class (Docket 28,300). Compare this with the following:

Commodity	Percentages of 1st Class rates Between New York and Boston
Sand in open top cars	9.0
Gravel in open top cars	6.6
Brick	11.5
Lime	22.6
Scrap iron	18.5
Fertilizer	20.2
Cement	22.6
Lumber	21.4
Paper, waste or scrap	21.4
Roofing	25.6
Asphalt	21.4

The above commodities were selected, not because they move between Boston and New York, but to demonstrate that the general publication of "piggy back" rates would constitute a wide-open invitation for the trucks to raid even low-grade carload traffic.

It is generally conceded that "piggy back" operations are not practicable at all points, and, if made effective generally, shippers not so served would complain of discrimination, particularly if the service were made available to individuals, as has been suggested by shippers. How could a concern handling a commodity rated 25 per cent of first class compete with one having "piggy back" service at 10 per cent of first class? It appears to the writer that the general adoption of the plan would cause the railroads to lose complete control of a large segment of their traffic, and "piggy back" rates would become the ceiling for all rates.

The writer does not share the view that "operation piggy back" is the only way or the best way to recover business from the highways. This business has been lost because of the continuation of a long-outmoded rate structure, and it is believed that a thorough overhaul of rail rates would provide the much needed relief from highway congestion and danger.

The equipment manufacturers are entitled to congratulations for the excellent design of cars for the handling of truck-trailers, and there is a definite place for this type of operation. It is the writer's opinion, however, that expansion of this service should be deferred until the railroads have, first, made a realistic and determined effort to regain traffic by rate adjustments. In other words, the railroads should look long before they leap.

A RAILROAD VICE-PRESIDENT

. . . A new tidewater record for fast discharge of foreign ore was established at Baltimore over a recent weekend when a full cargo of 20,560 tons of Liberian iron ore was unloaded in 13 hours and 55 minutes. The new record, believed to be the fastest unloading time for any ocean port, was established at the Curtis Bay ore pier of the Baltimore & Ohio.

RUST-OLEUM

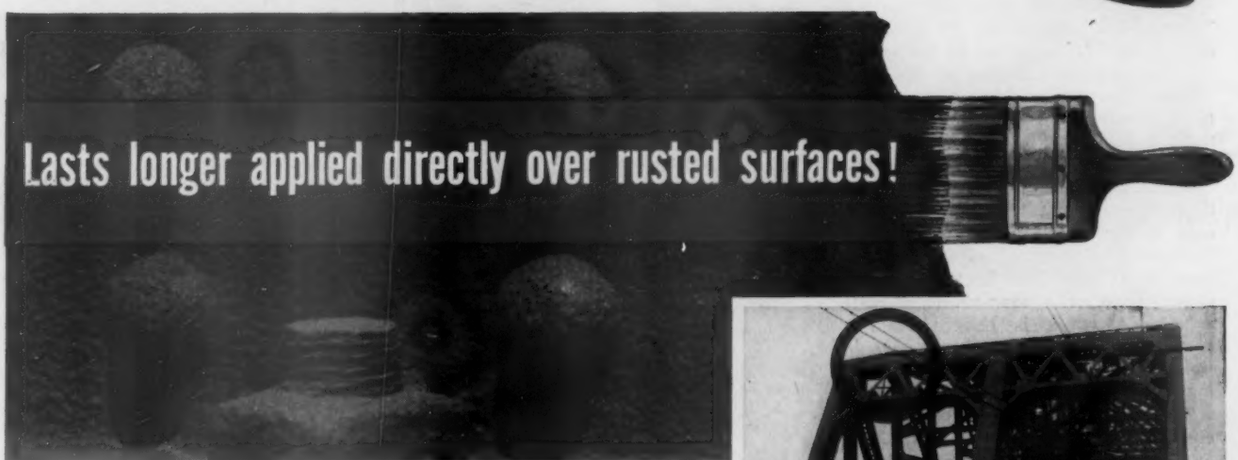
STOPS RUST!

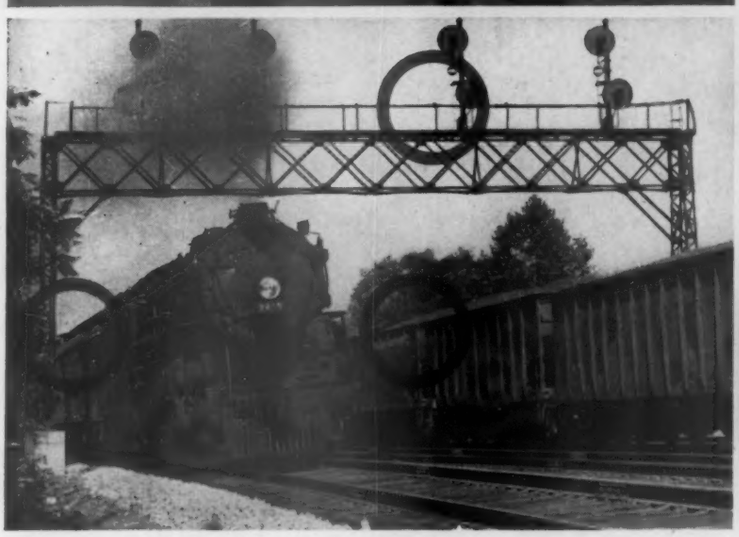
Cut Your Maintenance Costs On Signalling Equipment, Rolling Stock, Bridges, Towers, Tanks, etc.

Here's the *practical, sensible* answer to your rust problems! Costly sandblasting or chemical precleaning are not usually required . . . just wirebrush and scrape to remove rust scale and loose particles . . . then apply RUST-OLEUM by brush, dip, or spray over the rusted surface. Dries to a tough, elastic, rust-resisting film that lasts longer applied over rusted areas. So easy to use that one man often does the work of two . . . saves you time, labor, and money. Get the complete story from your RUST-OLEUM Rust Preventive Railroad Specialist today!

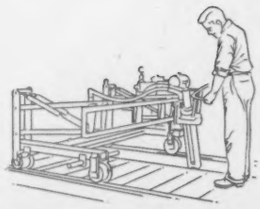
RUST-OLEUM CORPORATION
2597 Oakton Street, Evanston, Illinois

Available In All Colors, Aluminum and White

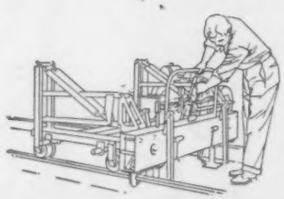




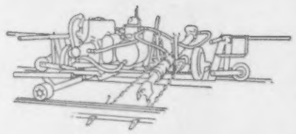
Request Your FREE Copy of The RUST-OLEUM Railroad Catalog Now!



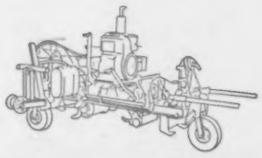
W84 SERIES A HYDRAULIC SPIKE PULLER is designed primarily for use in tie gangs, is also ideal for many other assignments. Light in weight, it features a dependable engine, ball and socket mounted pull assembly. Will pull spikes from either rail without change-over.



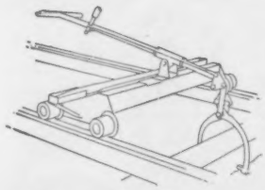
W86 SERIES A HYDRAULIC RAIL LIFTER makes tie plate removal and insertion unusually easy . . . with its spring-counterbalanced lifting arms, welded steel supporting frame and direct-driven hydraulic pump. Can be removed from track by only two men.



W68 HYDRAULIC SERIES A TIE REMOVER removes ties at a rate of approximately one per minute under average operating conditions. Ruggedly built, and designed with a minimum of moving parts, this remarkable unit requires only two men for operation.



W69 SERIES B TIE INSERTER inserts one tie every minute and requires only three men for operation. Maintenance is remarkably low because of its simple design and sound construction. Proven through years of performance on the job.



W83 SERIES A TIE NIPPER guarantees fast, efficient action. A simple linkage and lever give positive opening and closing of hooks, assure simple operation and great dependability. Handle can be pivoted to three different positions. Unit is demountable for easy handling.

MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.

WHATEVER YOUR NEEDS FOR

tie renewal

W87 SERIES A TIE BED SCARIFIER with but one operator can dig ten feet of tie bed a minute to a uniform controlled depth and at right angles to the rails. The assembly is raised and lowered hydraulically. The drive for renewable digging teeth is also hydraulic.

Fairmont has the answer!

To serve the varying needs of the nation's railroads, Fairmont produces a wide variety of equipment for every major maintenance problem. Whether it be rail inspection, transportation, ballast maintenance, tie renewal, or weed control—there is a Fairmont product specifically engineered to meet your requirements. Each is the result of years of careful design, manufacture and field-testing—built to rigid standards of quality and craftsmanship. The Fairmont equipment pictured on this page, for instance, illustrates clearly the thoroughness with which Fairmont has answered the problem of tie renewal. Individually, these units represent the industry's finest solutions to specific tie renewal assignments—and collectively, they offer the ideal answer to the entire tie renewal operation. They are positive proof that, regardless of your particular needs, you should rely on Fairmont. Naturally, the brief descriptions which we offer here can in no way reveal the full dependability, economy and ease of operation of each of these Fairmont products. We, therefore, invite your personal inquiry on any or all units in which you are interested. We will be delighted to send you complete and detailed information.

FAIRMONT RAILWAY MOTORS, INC.

FAIRMONT, MINNESOTA

HYSTER

Railroads' Best

Scores of leading U. S. railroads *are* doing something about rising costs! Their best countermeasures—in handling freight, stores and maintenance supplies—have proved to be Hyster's advanced materials handling techniques.

To better help railroads in their fight on rising costs, Hyster Company offers the services of a special railroad materials handling department—now available through any Hyster Dealer.

Your Hyster Dealer is a materials handling specialist in touch with latest railroad materials handling methods and will recommend the *right* practices, and place the *right* equipment on your job...equipment that is built to the same high standards of quality and performance demanded by railroads.

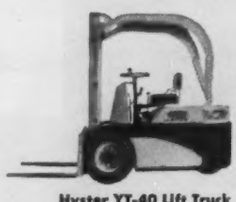
RAILROADS are making fast progress in mechanizing difficult or special materials handling jobs —such as the use of this Hyster Karry Krane in handling truck assemblies on the job. The Karry Krane is probably the most versatile of all industrial trucks...and is extremely useful in handling odd shapes.

Railroads handle millions of board feet of lumber and ties each year. These Hyster 150 Lift Trucks are handling treated cross ties in storage yard, stacking four loads high.

HYSTER®... *THE MOST COMPLETE LINE OF INDUSTRIAL TRUCKS*

Hyster 20 Lift Truck
1,000-2,000-lb capacities

Hyster YC-40 Lift Truck
4,000-lb capacity



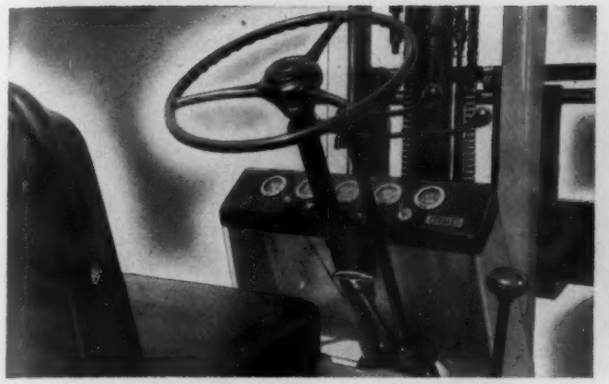
Hyster YT-40 Lift Truck
4,000-lb capacity

Hyster XA-60 Lift Truck
6,000-lb capacity

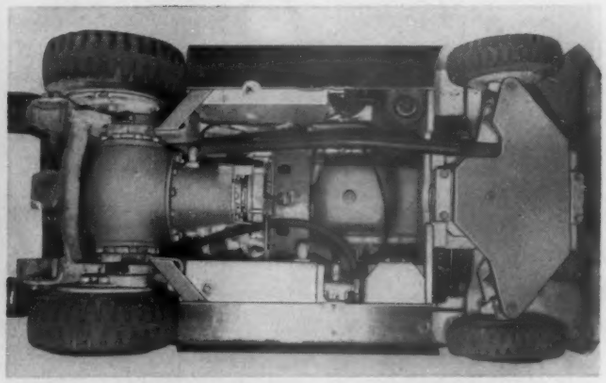
HYSTER

Be Sure to Call HYSTER Before You Buy

Industrial Trucks...
Weapon against rising costs!



Hyster Lift Trucks are particularly suited for railroad work. Modern, functional in every respect...easier to maneuver in crowded yards and shop quarters. Because operator fatigue is greatly reduced, operating efficiency is higher around the clock. Hyster Lift Trucks are as easy to drive as a car.



Greater Durability for tough railroad jobs. Ruggedly constructed Hyster Trucks take a beating, month after month, without the necessity of frequent overhauling. A Hyster Truck keeps its snug "new" feel for years. A Hyster Lift Truck not only "looks good" —*but is good all the way through!*

Hyster Turret Cargo Trucks reduce cost phenomenally in L.C.L. handling—particularly in smaller lightweight unit loads. This truck will operate all day on a gallon of gas!

"Self-loading" Hyster Straddle Trucks are highly efficient in transporting rails, steel shapes, timbers, drums, etc., up to 30,000 lbs. This old-timer still moves thousands of tons each year.

FOR RAILROADS *(Including over 100 attachments)*

Hyster 150 Lift Truck
15,000-lb capacity

Hyster Karry Krane®
10,000-lb capacity

Hyster Turret Cargo Truck
4,000-lb capacity

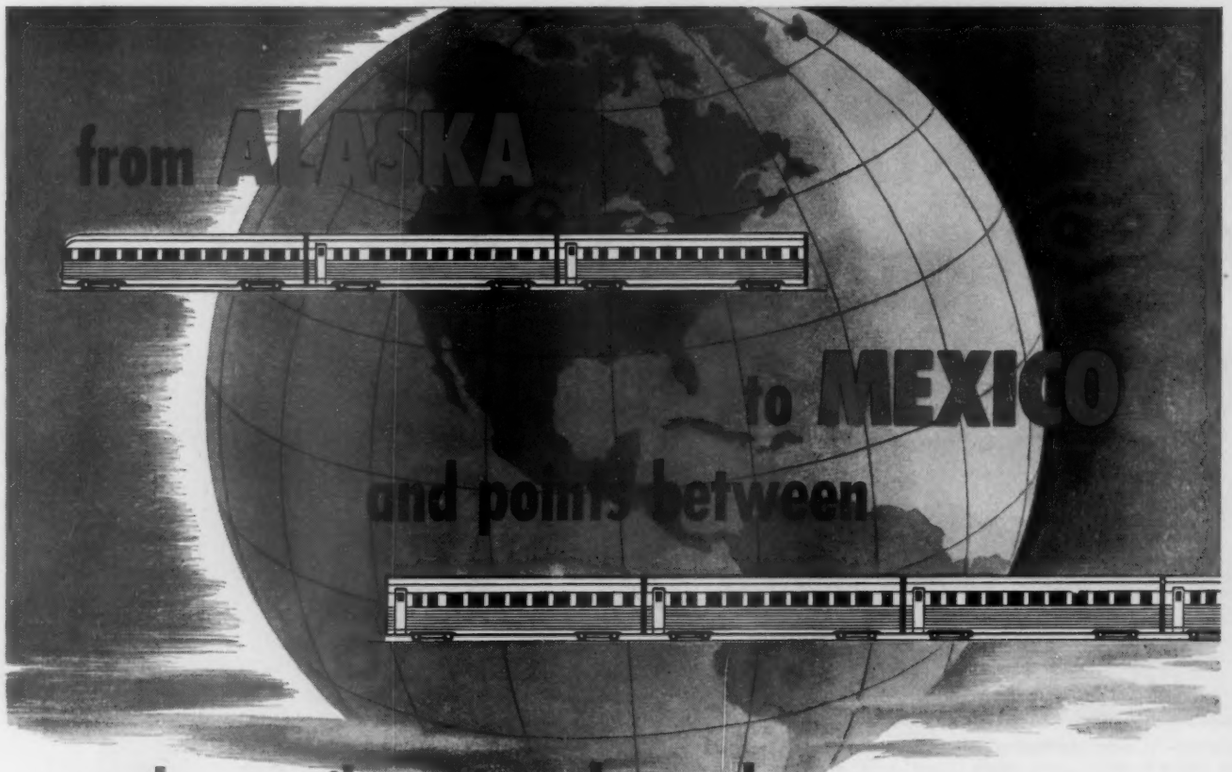
Call your Hyster Dealer today, or write for literature to:

HYSTER COMPANY
RAILROAD DEPARTMENT
2932 N. E. Clackamas St....Portland 8, Oregon
1032 Myers Street.....Danville, Illinois

THERE'S PROFIT IN HYSTER POWER

ANY Lift Truck!

FOUR FACTORIES: Portland, Oregon; Peoria, Illinois; Danville, Illinois; Nijmegen, The Netherlands.



modern railroading depends on EDISON batteries

TROPIC HEAT OR FRIGID COLD doesn't affect the dependable, long-life operation of EDISON Batteries . . . as the performance records of Edison-equipped passenger trains in Alaska or Mexico indicate.

In fact, wherever they have been installed, EDISON Batteries deliver superior road performance regardless of extreme temperatures—hot or cold.

EXCLUSIVE EDISON DESIGN is the secret to the EDISON Battery's unusual, long-life stamina! All-steel cell container and plates provide unmatched durability against mechanical injury . . . while EDISON's exclusive principle of battery operation assures electrical dependability regardless of the overcharging or overdischarging that may be incidental to the service. EDISON Batteries maintain high road capacity with virtually no need for yard charging.

THE ECONOMY IS BUILT IN an EDISON Battery, for its construction has meant unusually long service life (from 18 to 25 years) for many railroads, both large and small, on passenger car operations. Get all the facts on proven EDISON Battery dependability and economy before selecting your next passenger car battery—write for the name of your nearest Edison field engineer and a copy of Bulletin SB 3802 today. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N.J.

Most Dependable Power—
Lowest Over-all Cost
. . . you get <u>both</u> with an EDISON

EDISON
Nickel · Iron · Alkaline
STORAGE BATTERIES

MORE MILLIONS SPENT FOR RAILROAD LABORATORY

Any railroad man will tell you that this newly-consolidated plant at Hammond, Indiana turns out the very highest quality freight car products . . . *but to the old-timers the name "Standard" represents more than quality alone!*

To a man who has lived railroading all his life, every *Standard* product contains a bit of history; he remembers the first steel roof and how it grew as *Standard* continuously, ceaselessly developed it into today's Diagonal Panel Roof; he remembers the continuing improvements in the ends, floor plates, coupling devices and other products of *Standard's* constant research and testing.

To the old-timer, Standard Railway Equipment Manufacturing Company's new plant is another milestone in a lifetime of devotion to laboratory work for the railroads . . . . . and to us at *Standard* it is an investment not only for railroading, but *in* America's Railroads.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

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MODERN HIGH-SPEED, EASY RIDING

CABOOSE CAR TRUCKS

BARBER-BETTENDORF

Swing Motion

CABOOSE CAR TRUCKS

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ANOTHER OF THE
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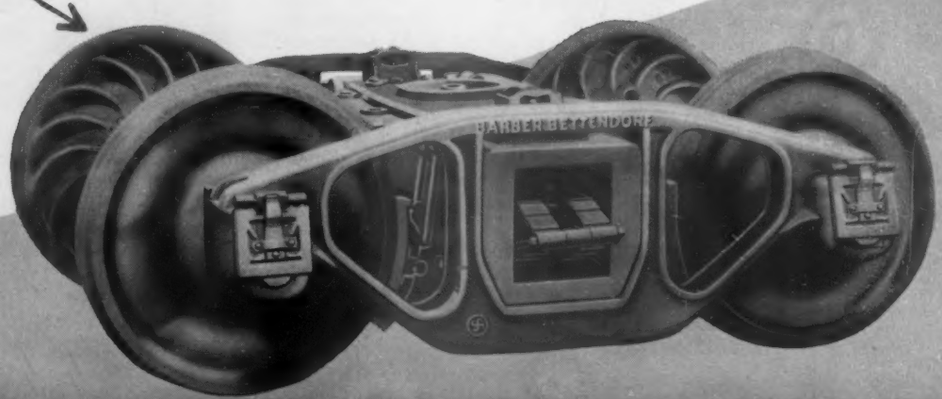

STEEL CASTINGS MANUFACTURER

NEW YORK
CHICAGO
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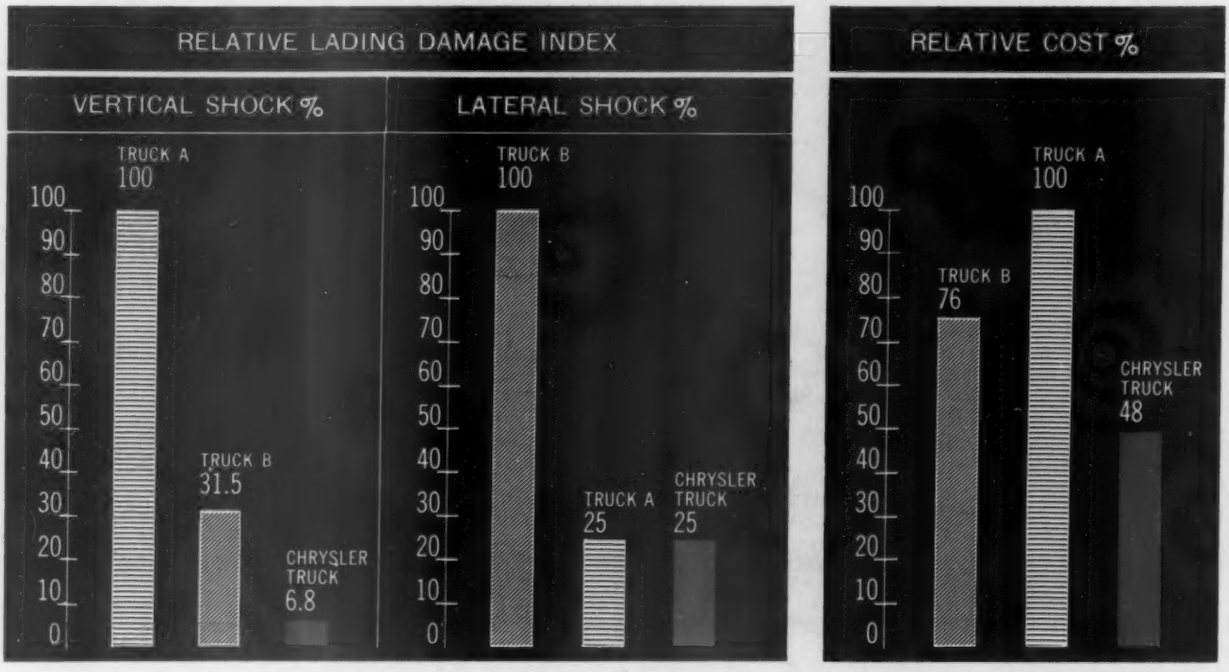
RICHMOND, VA

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

Impartial railroad tests of trucks for high-speed BX service prove

you can "deliver the goods" at less cost to you with Chrysler Design Railroad Freight Trucks



HERE are the results of a series of *completely impartial* tests conducted by one of the largest railroads, over its own lines, to determine the comparative performance of the leading high-speed freight car trucks.

In these tests Chrysler Design Trucks—built on a completely new application of the fundamental principles of Balanced Suspension—demonstrated great superiority over other high-speed trucks in protecting car and lading from vertical and lateral shocks.

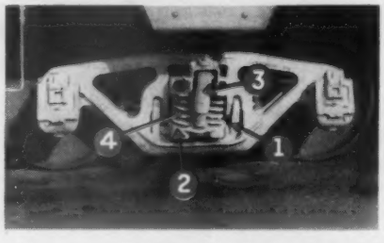
Obviously, this proved performance means fewer damage claims and more satisfied shippers. But does it cost a premium in price? Just the opposite! Chrysler Design Trucks are the lowest in price of all the trucks designated as "BX Type" in these comparative tests.

In fact, their cost is so low that it represents only a modest premium over conventional freight trucks which are not designed for the continuous high speeds in head-end passenger service. This will be repaid many times over in the regular freight movement of fragile merchandise, through reduced damage claims and the intangible but most important factor of shipper satisfaction.

Is it any wonder that users report exceptionally high earnings for cars equipped with Chrysler Design Trucks?

If you'd like to know more about Chrysler Design Freight Trucks, write Chrysler Corporation, Engineering Division, P. O. Box 1118, Detroit 31, Michigan.

▲ *Comparative vertical and lateral lading damage index and cost of Chrysler Design versus two other leading "BX Type" trucks. Shock measurements taken from impartial high-speed road tests.*



THIS IS BALANCED SUSPENSION

(1) Rigid U-shaped swing hangers provide high-capacity, shock-absorbing lateral motion. Combined stiffness of swing hangers and (2) special cast steel spring plank maintains positive alignment of side frames—without requiring high pressure and resultant wear between bolster and side frame columns. (3) Chrysler Design self-contained, long-wearing, constant friction snubbers work with (4) the longest travel AAR standard coil springs to absorb vertical shocks and control spring oscillation.

A result of Chrysler Corporation's continuous research into every phase of vehicle design and suspension, Chrysler Design Railroad Freight Trucks are manufactured and sold by the Symington-Gould Corporation, Depew, N. Y., under Chrysler license. Chrysler Design railroad friction snubbers are manufactured and sold under Chrysler license by the Houdaille-Hershey Corporation, Detroit 2, Michigan.

CHRYSLER CORPORATION

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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1953

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1953	Total (inc. misc.) 1952	Operating Expenses: Maint. Way and Structures: Total 1953	Total 1952	Deprec. and Retirements	Maint. Equipment: Total 1953	Total 1952	Deprec. and Retirements	Traffic	Transportation	Total 1953	Total 1952	Operating ratio 1953	Operating ratio 1952	Net from railway operation	Railway tax accruals	Net railway operating income 1953	Net railway operating income 1952
Akron, Canton & Youngstown	Sept.	171	$501	....	$512	$518	$73	$88	$6	$56	$55	$15	$41	$142	$354	$350	69.0	67.5	$159	$59	$55	$95
	9 mos.	171	4,738	....	4,867	4,142	633	690	52	477	489	138	359	1,297	3,076	3,008	63.2	72.6	1,791	769	729	559
Atchison, Topeka & Santa Fe	Sept.	13,095	41,027	$3,869	49,136	50,015	8,134	7,368	853	9,207	8,523	1,793	1,190	14,811	35,408	34,092	72.1	68.2	13,728	7,602	6,344	5,290
	9 mos.	13,095	390,691	38,865	467,643	442,029	69,217	64,300	6,243	83,403	80,841	15,514	10,634	139,509	321,854	313,316	68.8	70.9	145,789	82,950	61,030	52,032
Atlanta & St. Andrews Bay	Sept.	82	275	1	282	297	29	42	3	26	26	4	6	64	145	148	51.3	49.6	138	68	36	45
	9 mos.	82	2,758	13	2,838	2,706	277	331	26	197	211	38	72	608	1,293	1,328	45.5	49.1	1,546	823	442	423
Atlanta & West Point	Sept.	93	285	31	373	376	65	52	5	64	66	13	15	147	314	331	84.0	88.2	60	26	20	....
	9 mos.	93	2,536	365	3,342	3,396	498	419	57	603	542	115	143	1,362	2,817	2,779	84.3	81.8	525	244	172	137
Western of Alabama	Sept.	133	337	30	408	403	57	48	7	67	67	17	16	150	311	295	76.4	73.2	96	56	44	51
	9 mos.	133	2,863	352	3,559	3,478	507	442	65	613	615	144	148	1,296	2,765	2,682	77.7	77.1	794	460	375	352
Atlantic & Danville	Sept.	205	143	....	145	166	35	34	2	15	20	5	11	48	121	131	83.4	79.1	24	5	—6	5
	9 mos.	205	1,431	....	1,450	1,427	313	298	17	135	123	43	106	457	1,120	1,099	77.2	77.0	331	91	20	65
Atlantic Coast Line	Sept.	5,379	9,302	1,179	11,463	11,958	2,310	2,897	197	3,150	3,416	546	365	4,481	10,885	11,672	95.0	97.6	578	....	641	567
	9 mos.	5,379	100,520	15,664	125,994	128,070	21,859	22,717	1,470	30,947	26,445	4,880	3,373	46,271	107,986	101,841	85.7	79.5	18,008	8,075	6,966	8,897
Charleston & Western Carolina	Sept.	343	494	2	509	487	164	112	9	100	114	42	17	164	459	412	90.1	84.5	50	20	44	51
	9 mos.	343	5,151	16	5,306	4,894	1,391	1,228	65	904	1,017	382	154	1,529	4,106	4,083	77.4	83.4	1,201	555	648	438
Baltimore & Ohio	Sept.	6,186	35,196	1,566	39,654	40,108	5,253	5,119	487	8,095	7,601	1,029	891	14,923	30,740	29,778	77.5	74.2	8,914	3,407	3,880	4,374
	9 mos.	6,186	311,970	16,617	351,966	326,090	46,245	42,534	4,782	73,572	67,377	9,158	8,146	133,257	276,345	260,671	78.5	79.9	75,621	27,911	35,921	32,484
Staten Island Rapid Transit	Sept.	29	222	51	276	301	48	62	19	22	27	2	1	125	224	284	81.3	94.4	52	36	—10	—45
	9 mos.	29	2,123	449	2,611	2,794	520	509	125	260	284	17	15	1,278	2,354	2,454	90.2	87.8	256	326	—283	—209
Bangor & Aroostook	Sept.	602	626	32	699	725	200	250	20	245	227	92	21	238	774	781	110.7	107.7	—75	13	77	29
	9 mos.	602	9,412	307	10,093	9,831	2,300	2,220	165	2,129	2,074	794	185	2,634	7,825	7,736	77.5	78.7	2,268	1,324	1,612	1,211
Bessemer & Lake Erie	Sept.	213	3,060	1	3,077	3,453	213	262	20	626	646	124	19	545	1,441	1,609	46.8	46.6	1,636	1,123	753	1,001
	9 mos.	213	23,437	6	23,610	18,680	1,953	1,821	207	6,354	5,213	1,173	187	4,273	13,556	12,137	57.4	65.0	10,055	6,906	4,942	4,123
Boston & Maine	Sept.	1,679	5,537	949	7,353	7,475	1,288	1,334	183	1,097	1,158	175	107	2,950	5,793	5,974	78.8	79.9	1,560	670	484	552
	9 mos.	1,679	51,063	8,714	67,252	65,617	11,839	12,166	1,540	10,053	10,244	1,604	1,024	27,938	53,936	54,454	80.2	83.0	13,315	5,905	3,883	2,897
Cambria & Indiana	Sept.	35	150	....	150	147	21	27	1	94	92	22	....	21	143	156	95.4	106.2	7	81	91	58
	9 mos.	35	1,335	....	1,336	1,168	174	168	8	843	723	201	1	194	1,273	1,161	95.3	99.4	63	610	720	483
Canadian Pacific Lines in Maine	Sept.	234	304	65	402	385	90	106	5	80	106	17	8	161	359	404	89.5	105.0	42	27	4	—67
	9 mos.	234	4,506	472	5,271	5,090	992	1,094	46	1,188	894	154	73	2,079	4,473	4,224	84.9	83.0	798	252	248	45
Canadian Pacific Lines in Vermont	Sept.	90	182	23	224	224	140	69	4	38	29	....	7	123	316	229	141.4	102.4	—93	16	—174	—70
	9 mos.	90	1,735	122	2,037	2,008	768	617	36	335	271	2	63	1,116	2,363	2,099	116.0	104.5	—327	122	—957	—689
Central of Georgia	Sept.	1,786	2,934	178	3,370	3,453	571	565	46	569	580	119	138	1,316	2,794	2,849	82.9	82.5	577	223	285	365
	9 mos.	1,786	28,531	1,774	32,860	32,231	5,330	5,316	534	5,177	5,455	999	1,238	12,570	26,219	27,251	79.8	84.5	6,641	2,862	3,050	2,123
Central of New Jersey	Sept.	616	4,449	466	5,276	5,738	756	813	91	965	1,044	183	86	2,000	4,014	4,306	76.1	75.0	1,261	597	582	571
	9 mos.	617	39,951	4,249	47,123	47,567	6,449	6,262	807	9,254	8,784	1,578	731	19,306	37,662	38,068	79.9	80.0	9,460	4,389	3,904	3,501
Central Vermont	Sept.	422	851	73	999	1,017	238	151	16	106	98	12	16	359	763	698	76.4	68.6	236	45	100	215
	9 mos.	422	7,580	583	8,794	8,290	1,896	1,593	147	1,150	1,340	112	146	3,350	6,929	7,157	78.8	86.3	1,865	381	661	213
Chesapeake & Ohio	Sept.	5,114	27,914	620	30,303	32,393	3,978	3,847	381	5,318	5,774	1,500	680	9,169	20,472	20,559	67.6	63.5	9,831	5,041	5,370	6,262
	9 mos.	5,115	243,461	6,295	262,818	267,710	35,149	37,064	3,308	49,292	54,056	13,328	6,170	81,164	183,576	192,288	69.8	71.8	79,242	37,083	45,461	40,604
Chicago & Eastern Illinois	Sept.	868	2,492	236	3,011	3,033	442	369	27	538	485	127	136	1,062	2,355	2,229	78.2	73.5	656	221	335	429
	9 mos.	868	22,407	2,402	27,471	25,640	3,552	3,299	252	4,802	4,060	1,122	1,189	9,749	20,923	19,418	76.2	75.7	6,548	2,165	3,204	3,105
Chicago & Illinois Midland	Sept.	130	707	....	725	616	86	45	7	162	85	23	31	211	534	367	73.7	59.6	191	101	64	103
	9 mos.	130	6,355	1	6,503	4,940	740	535	69	1,404	1,217	209	282	1,973	4,821	4,100	74.1	83.0	1,683	886	571	149
Chicago & North Western	Sept.	7,874	14,703	1,831	18,328	19,774	2,841	2,876	309	3,170	3,016	804	373	7,491	14,715	15,152	80.3	76.6	3,612	1,083	1,489	2,828
	9 mos.	7,874	120,674	17,004	153,860	150,223	26,231	24,469	3,014	28,684	28,352	7,049	3,391	68,329	134,290	133,759	87.3	89.0	19,570	9,749	4,273	2,423
Chicago, Burlington & Quincy	Sept.	8,867	19,851	1,768	23,995	24,672	4,442	3,914	372	3,429	3,324	734	485	8,237	17,396	16,879	72.5	68.4	6,599	3,474	2,619	3,024
	9 mos.	8,867	171,448	15,506	207,591	194,215	35,022	30,312	3,407	29,680	31,021	6,274	4,586	72,302	149,012	142,215	71.8	73.2	58,580	31,381	23,231	19,883
Chicago Great Western	Sept.	1,468	2,772	10	2,980	3,100	481	511	56	335	400	120	117	893	1,914	2,168	64.2	69.9	1,066	379	387	293
	9 mos.	1,468	20,673	122	22,255	26,185	3,597	4,385	360	2,737	3,500	1,077	1,016	6,949	14,956	18,394	67.2	70.3	7,299	2,745	2,944	2,656
Chicago, Indianapolis & Louisville	Sept.	541	1,678	51	1,866	1,925	369	323	19	259	260	70	90	622	1,430	1,370	76.6	71.2	436	161	185	206
	9 mos.	541	14,679	563	16,407	16,190	3,147	2,891	174	2,433	2,466	627	788	5,625	12,858	12,625	78.3	78.0	3,549	1,304	1,446	1,225
Chicago, Milw., St. Paul & Pacific	Sept.	10,667	19,602	1,398	23,440	25,079	4,133	3,578	431	4,395	4,406	850	454	8,856	18,834	18,620	80.4	74.2	4,597	1,983	1,644	2,411
	9 mos.	10,670	161,625	12,767	194,725	198,803	32,930	30,706	3,492	40,807	40,714	7,696	4,402	77,319	164,650	167,092	84.6	84.0	30,075	13,865	9,120	10,280
Chicago, Rock Island & Pacific	Sept.	7,891	13,239	1,519	16,292	17,346	2,602	2,462	265	2,739	2,896	555	484	5,709	12,362	12,583	75.9	72.5	3,930	1,226	2,179	2,138
	9 mos.	7,906	131,202	14,560	160,268	158,245	21,094	20,708	2,297	24,541	25,659	4,955	4,413	54,136	111,748	115,140	69.7	72.8	48,520	20,367	21,253	17,899
Chicago, St. Paul, Minn. & Omaha	Sept.	1,617	2,608	164	3,000	3,088	518	455	49	467	410	93	66	1,379	2,551	2,470	85.0	80.0	449	178	5	180
	9 mos.	1,617	21,463	1,524	25,012	25,087	4,452	4,018	426	3,898	3,764	808	611	12,549	22,683	22,183	90.7	88.4	2,330	1,618	—1,278	—687
Clinchfield	Sept.	317	2,065	1	2,075	2,046	382	428	20	357	350	91	46	439	1,265	1,251	61.0	61.1	810	216	794	765
	9 mos.	317	18,431	10	18,528	17,933	3,279	2,722	190	3,126	3,017	824	415	3,800	10,994	10,320	59.3	57.6	7,535	1,983	6,641	6,838

(Table continued on page 72)

Selecting RIGHT Material Important When

CLEANING AIR CONDITIONING EQUIPMENT

Whether your parts cleaning tank is located outdoors or indoors, the most important factor in removing clogging deposits from air conditioning equipment is selecting the RIGHT cleaning material for the job.

For example, look at that evaporative condenser in the photograph above. O. H. Clark, Oakite Railway Service Representative, is inspecting the results after it has been cleaned. But first he checked the type and amount of impinged deposits to be removed. From practical experience he knew what Oakite material was best to use, the right concentration and temperature of solution. He knew cleaning must be fast, thorough, safe. And cost must be kept low. Like other Oakite Service Representatives, O. H. Clark is successful in the results he obtains because he knows the RIGHT materials to use and the most economical methods in applying them in the maintenance of air conditioning equipment.

Over 40 years' intimate knowledge of the exacting requirements of railroad cleaning provides the background experience for Oakite recommendations. It is freely available to any road seeking ways to lower costs and improve results in maintenance. Write today. There is no obligation.

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It's a *safe* bet, because there's never any risk at a railroad-highway crossing protected by famous Model 10's.

Day and night . . . year-in, year-out . . . in any kind of weather, Model 10 Automatic Signals operate flawlessly. They never fail to warn motorists and pedestrians of approaching trains—never fail to block traffic until all danger is past.

Never fail? Look at the record: During the past seventeen years, thousands of these signals have been placed in service on a hundred railroads, and *not a single accident has ever occurred as a result of operative failure on the part of the signals.*

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2428 SOUTH ASHLAND AVENUE • CHICAGO 8, ILLINOIS

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1953

Name of Road		Average mileage operated during period	Operating Revenues				Operating Expenses												Net from railway operation	Railway tax accruals	Net railway operating income	
							Maint. Way and Structures			Maint. Equipment							Operating ratio					
			Freight	Pass.	Total(inc. misc.) 1953	Total(inc. misc.) 1952	Total 1953	Total 1952	Deprec. and Retirements	Total 1953	Total 1952	Deprec. and Retirements	Traffic	Transportation	Total 1953	Total 1952	1953	1952				
Colorado & Southern	Sept.	729	1,173	79	1,366	1,538	256	164	19	167	198	40	32	428	944	980	69.1	63.7	422	227	165	269
	9 mos.	731	10,311	670	12,051	11,551	1,666	1,359	174	1,591	1,797	336	271	4,054	8,092	8,120	67.2	70.3	3,959	2,109	1,718	1,439
Ft. Worth & Denver	Sept.	1,038	1,404	150	1,693	1,854	304	251	41	320	246	38	56	575	1,354	1,316	80.0	71.0	338	82	145	242
	9 mos.	1,038	14,696	1,277	17,324	17,291	2,703	2,602	350	2,418	2,202	316	526	5,741	12,275	12,476	70.9	72.2	5,048	1,861	2,238	2,151
Colorado & Wyoming	Sept.	40	180	....	278	280	14	15	2	37	47	11	1	96	160	187	57.3	66.6	119	69	47	44
	9 mos.	40	1,650	....	2,618	2,020	159	179	17	316	294	98	13	948	1,537	1,368	58.6	67.6	1,082	647	425	233
Columbus & Greenville	Sept.	168	165	....	176	203	31	28	4	36	13	6	4	55	144	116	81.8	56.9	32	19	6	34
	9 mos.	168	1,480	....	1,551	1,365	317	264	33	240	240	56	38	446	1,212	1,141	78.1	83.6	339	252	119	77
Delaware & Hudson	Sept.	793	4,684	184	5,018	5,213	788	756	58	724	930	70	85	1,654	3,448	3,598	68.7	69.0	1,570	627	999	804
	9 mos.	793	38,916	1,477	41,718	42,592	6,953	6,334	603	7,373	8,537	1,221	762	14,565	31,489	33,463	75.5	78.6	10,228	3,271	7,284	4,795
Delaware, Lackawanna & Western	Sept.	962	6,106	766	7,598	8,116	935	866	165	1,157	1,322	322	178	3,106	5,640	5,830	74.2	71.8	1,957	1,049	927	1,083
	9 mos.	962	54,536	7,134	68,011	68,700	8,059	7,663	1,382	11,453	12,749	2,778	1,602	28,757	52,325	53,885	76.9	78.4	15,686	7,898	7,695	7,271
Denver & Rio Grande Western	Sept.	2,313	6,902	311	7,452	7,870	806	955	260	1,187	1,111	262	176	2,149	4,635	4,968	62.2	63.1	2,817	1,436	1,205	1,270
	9 mos.	2,317	58,808	2,877	63,837	58,614	8,746	7,888	1,264	10,420	10,104	2,246	1,611	18,713	42,229	41,432	66.2	70.7	21,608	11,195	9,329	7,414
Detroit & Mackinac	Sept.	232	199	....	203	168	44	43	3	23	19	9	5	39	121	112	59.5	66.8	82	39	35	31
	9 mos.	232	1,547	2	1,597	1,495	370	387	29	214	186	85	43	329	1,051	1,047	65.8	70.1	546	291	259	216
Detroit & Toledo Shore Line	Sept.	50	594	....	637	638	96	79	3	60	53	18	18	195	383	334	60.0	52.3	254	77	70	88
	9 mos.	50	6,296	....	6,626	5,606	749	690	28	570	538	158	153	1,911	3,509	3,178	53.0	56.7	3,118	1,121	990	743
Detroit, Toledo & Ironton	Sept.	464	1,825	....	1,908	1,489	273	222	24	301	250	86	37	747	1,420	918	74.4	61.6	488	209	215	258
	9 mos.	464	16,101	3	17,003	12,977	2,228	1,794	217	2,315	2,906	703	292	6,626	12,059	8,973	70.9	69.1	4,943	2,095	2,135	1,723
Duluth, Missabe & Iron Range	Sept.	568	7,519	1	8,781	8,896	583	690	67	675	675	102	9	2,134	3,526	3,881	40.2	43.6	5,254	3,507	1,745	2,066
	9 mos.	568	44,687	6	51,971	34,362	5,508	5,684	644	6,559	5,751	906	83	14,585	27,803	24,607	53.5	71.6	24,168	16,286	8,176	3,662
Duluth, South Shore & Atlantic	Sept.	553	579	6	620	797	241	189	10	142	139	20	27	221	651	645	104.9	80.9	—31	Cr. 33	—43	45
	9 mos.	552	5,924	52	6,311	5,872	1,570	1,208	91	1,344	1,245	183	222	2,053	5,376	5,010	85.2	85.3	935	237	368	317
Duluth, Winnipeg & Pacific	Sept.	175	386	1	398	419	101	99	4	93	86	2	6	191	398	373	100.1	89.0	....	33	—95	—47
	9 mos.	175	3,765	9	3,839	4,554	801	768	38	689	704	19	50	1,744	3,350	3,557	87.3	78.1	489	307	—330	85
Elgin, Joliet & Eastern	Sept.	236	3,414	.....	4,247	4,617	374	300	44	722	724	116	34	1,567	2,498	2,849	58.8	61.7	1,748	863	421	427
	9 mos.	236	34,816	....	42,239	34,023	2,917	3,004	279	8,287	5,904	1,036	306	15,021	27,594	23,315	65.3	68.5	14,645	7,201	3,661	2,160
Erie	Sept.	2,237	13,524	566	15,387	15,787	2,610	2,198	517	2,144	2,031	496	359	6,050	11,832	11,410	76.9	72.3	3,554	1,436	1,351	1,923
	9 mos.	2,237	121,937	5,400	138,002	129,005	19,286	18,183	2,682	19,518	20,049	4,445	3,199	54,255	102,345	100,348	74.2	77.8	35,657	14,941	14,500	12,352
Florida East Coast	Sept.	571	1,440	332	1,935	1,994	362	311	57	514	538	78	75	775	1,872	1,862	96.7	93.4	63	126	—142	160
	9 mos.	571	18,079	5,384	25,472	26,164	3,355	3,217	428	4,736	4,496	701	675	9,208	19,575	19,542	76.8	74.7	5,897	1,562	2,838	3,643
Georgia Railroad	Sept.	321	716	20	802	801	128	129	8	136	131	31	34	309	640	663	79.8	82.7	162	36	138	117
	9 mos.	321	6,423	247	7,249	7,278	1,091	1,051	75	1,228	1,155	277	309	2,924	5,874	5,856	81.0	80.5	1,375	335	1,289	1,247
Georgia & Florida	Sept.	360	281	....	286	300	95	94	4	36	40	6	20	86	252	277	88.1	92.1	34	18	—7	—22
	9 mos.	360	3,004	....	3,044	2,834	942	808	32	342	331	51	180	882	2,487	2,309	81.7	81.5	557	170	118	123
Grand Trunk Western	Sept.	952	3,704	248	4,292	4,709	824	793	55	922	908	89	74	2,193	4,195	4,026	97.7	85.5	97	305	—636	40
	9 mos.	952	41,864	2,000	47,178	41,241	6,792	6,766	467	7,860	7,527	802	695	20,324	37,365	35,293	79.2	85.6	9,813	2,756	3,802	675
Can. Nat'l Lines in N. Eng.	Sept.	172	165	8	202	161	65	98	9	51	119	....	3	125	263	353	130.4	219.3	—61	24	—146	—257
	9 mos.	172	1,653	72	2,034	1,962	643	670	86	378	635	1	25	1,258	2,483	2,743	122.1	139.8	—449	217	—1,149	—1,375
Great Northern	Sept.	8,303	24,227	971	27,196	30,066	4,179	3,794	318	3,781	3,917	710	403	7,693	16,910	16,579	62.2	55.1	10,286	5,339	4,398	5,762
	9 mos.	8,303	174,533	9,612	199,066	188,977	36,822	33,646	2,797	34,204	33,431	6,354	3,615	63,940	146,180	141,910	73.4	75.1	52,886	27,990	20,561	17,842
Green Bay & Western	Sept.	224	439	....	449	291	109	60	4	45	37	8	20	103	295	209	65.8	71.7	153	72	49	20
	9 mos.	224	3,444	....	3,508	2,681	782	634	34	369	346	70	188	829	2,308	2,063	65.8	76.9	1,199	597	394	130
Gulf, Mobile & Ohio	Sept.	2,766	7,063	334	7,826	7,764	1,202	1,048	68	1,440	1,350	260	257	2,196	5,450	5,072	69.6	65.3	2,376	1,028	956	1,014
	9 mos.	2,766	62,273	3,469	70,277	67,786	10,683	10,693	628	12,710	11,925	2,339	2,367	20,052	49,028	47,471	69.7	70.0	21,249	9,661	8,454	7,809
Illinois Central	Sept.	6,537	21,575	1,809	25,726	25,923	3,818	4,011	389	4,042	4,513	701	506	8,574	17,928	18,726	69.7	72.2	7,798	4,327	3,089	5,945
	9 mos.	6,538	189,242	17,495	229,645	221,471	34,698	35,076	3,370	36,843	37,076	6,138	4,567	79,293	164,760	165,591	71.7	74.8	64,885	35,858	24,807	23,632
Illinois Terminal	Sept.	355	925	59	1,100	1,221	143	157	31	190	145	42	44	392	826	839	75.1	68.7	274	112	114	126
	9 mos.	377	8,009	588	9,562	9,509	1,441	1,377	232	1,652	1,423	365	388	3,549	7,580	7,492	79.3	78.8	1,982	828	880	714
Kansas City Southern	Sept.	891	3,374	111	3,825	4,024	634	406	34	607	498	91	104	1,124	2,598	2,227	67.9	55.4	1,227	384	615	697
	9 mos.	891	32,046	1,257	36,439	34,811	4,708	3,784	326	4,817	4,280	815	813	10,519	22,016	19,965	60.4	57.4	14,423	5,850	6,324	5,913
Kansas, Oklahoma & Gulf	Sept.	327	517	....	521	637	98	114	11	60	29	11	25	118	324	302	62.2	47.5	197	91	70	118
	9 mos.	327	5,126	4	5,175	5,412	852	922	53	417	344	103	241	1,105	2,836	2,852	54.8	52.7	2,339	1,130	903	908
Lake Superior & Ishpeming	Sept.	156	516	....	640	619	66	64	12	62	49	16	2	121	264	258	41.2	41.7	376	233	153	169
	9 mos.	156	3,266	....	4,020	2,868	541	471	107	530	498	131	18	879	2,081	1,856	51.8	64.7	1,939	1,080	974	443
Lehigh & Hudson River	Sept.	96	306	....	306	297	43	41	2	30	28	8	14	87	188	174	61.3	58.7	119	46	39	47
	9 mos.	96	2,598	....	2,603	2,422	375	393	21	265	265	76	122	770	1,641	1,617	63.0	66.8	962	393	345	314
Lehigh & New England	Sept.	180	793	....	801	918	86	104	7	146	125	39	12	207	492	487	61.3	53.1	310	188	186	233
	9 mos.	180	6,001	....	6,058	6,447	781	703	57	1,187	1,148	342	115	1,821	4,245	3,984	70.1	61.8	1,813	1,195	1,225	1,461
Lehigh Valley	Sept.	1,164	5,796	269	6,491	7,248	832	818	97	1,181	1,025	208	142	2,434	4,832	4,703	74.4	64.9	1,659	583	955	1,251
	9 mos.	1,175	51,891	2,733	57,838	57,829	7,598	7,197	879	9,878	9,494	1,864	1,269	22,133	43,138	42,520	74.6	73.5	14,700	5,428	8,052	8,234
Long Island	Sept.	365	1,263	3,271	4,793	4,777	611	618	95	866	767	121	24	2,275	3,932	3,707	82.0	77.6	861	381	174	328
	9 mos.	365	11,000	28,931	42,151	39,774	5,791	5,509	777	8,030	7,054	1,091	141	20,291	35,738	34,963	84.8	87.9	6,413	3,520	448	—1,720

(Table continued from page 69)

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1953

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1953	Total (inc. misc.) 1952	Operating Expenses: Maint. Way and Structures: Total 1953	Total 1952	Deprec. and Retirements	Maint. Equipment: Total 1953	Total 1952	Deprec. and Retirements	Traffic	Transportation	Total 1953	Total 1952	Operating ratio 1953	Operating ratio 1952	Net from railway operation	Railway tax accruals	Net railway operating income 1953	Net railway operating income 1952
Louisiana & Arkansas	Sept.	756	2,458	53	2,595	2,115	526	382	105	386	293	89	80	584	1,650	1,381	63.6	65.3	945	342	527	381
	9 mos.	756	21,481	517	22,886	19,599	3,665	3,246	270	2,675	2,412	784	681	5,572	13,294	12,152	58.1	62.0	9,592	4,169	4,796	3,475
Louisville & Nashville	Sept.	4,737	17,173	943	19,336	19,551	2,740	2,820	265	3,836	4,078	785	329	6,327	13,859	14,465	71.7	74.0	5,477	3,450	3,000	2,722
	9 mos.	4,737	156,444	9,881	177,455	167,132	24,739	24,449	2,018	34,699	36,443	6,913	3,096	58,524	126,948	129,963	71.5	77.8	50,507	29,375	26,256	18,677
Maine Central	Sept.	945	1,656	126	1,952	2,068	380	493	52	354	393	72	18	712	1,552	1,748	79.5	84.5	400	192	189	142
	9 mos.	945	16,628	1,122	19,277	20,241	4,075	3,985	465	3,184	3,436	648	188	6,683	14,895	15,453	77.3	76.4	4,381	2,047	1,897	1,968
Midland Valley	Sept.	334	244	....	248	192	53	40	14	23	16	4	5	62	152	132	61.3	68.5	96	52	26	34
	9 mos.	334	1,920	....	1,946	1,562	423	437	74	148	177	33	46	536	1,225	1,282	62.9	82.0	722	330	241	64
Minneapolis & St. Louis	Sept.	1,397	1,952	5	2,040	2,122	334	334	27	273	269	77	126	595	1,446	1,456	70.9	68.6	594	332	251	256
	9 mos.	1,397	15,751	65	16,444	16,484	3,005	2,871	267	2,403	2,530	683	1,121	5,261	12,813	12,800	77.9	77.7	3,631	2,015	1,457	1,382
Minn., St. Paul & S. Ste. Marie	Sept.	3,222	4,155	116	4,517	4,732	713	1,052	48	619	576	99	75	1,350	2,887	3,256	63.9	68.8	1,630	794	762	508
	9 mos.	3,223	28,203	866	30,983	32,133	6,829	6,809	446	6,043	5,994	885	696	11,708	26,486	26,863	85.5	83.6	4,497	2,620	1,660	1,774
Mississippi Central	Sept.	148	225	....	229	236	62	91	2	28	54	6	14	50	165	240	72.0	101.7	64	25	24	—14
	9 mos.	148	2,059	....	2,090	2,011	498	444	21	284	265	39	123	532	1,530	1,501	73.2	74.6	561	228	221	162
Missouri Illinois	Sept.	172	494	....	500	512	90	95	4	72	64	21	11	144	328	301	65.6	58.8	172	113	59	81
	9 mos.	172	4,456	1	4,467	3,954	702	687	35	677	637	187	89	1,106	2,658	2,554	59.5	64.6	1,808	1,092	775	650
Missouri-Kansas-Texas Lines	Sept.	3,242	5,807	247	6,788	7,012	1,108	1,049	94	1,139	1,030	240	248	2,386	5,173	5,017	76.2	71.5	1,615	606	691	887
	9 mos.	3,242	56,442	2,500	65,331	62,562	9,853	8,930	923	10,018	9,106	2,080	2,292	22,141	47,092	45,157	72.1	72.2	18,239	7,697	7,431	7,217
Missouri Pacific	Sept.	6,935	17,296	897	19,715	21,223	3,924	3,561	284	4,195	4,011	764	490	7,087	16,341	15,690	82.9	73.9	3,374	1,155	1,729	2,714
	9 mos.	6,935	156,253	8,699	180,660	181,564	33,875	30,372	2,518	36,077	34,527	6,693	4,231	65,108	145,211	140,273	80.4	77.3	35,449	11,634	18,772	20,674
International-Great Northern	Sept.	1,104	2,527	142	2,889	3,276	621	607	37	583	571	116	61	1,210	2,595	2,525	89.8	77.1	295	Cr. 29	237	482
	9 mos.	1,104	25,233	1,467	28,863	28,154	6,233	5,829	347	5,194	5,077	1,006	545	10,923	24,077	23,541	83.4	83.6	4,787	911	2,918	2,398
Gulf Coast Lines	Sept.	1,723	2,887	107	3,198	3,582	720	796	38	543	570	107	94	1,082	2,582	2,677	80.7	74.7	616	143	316	365
	9 mos.	1,723	30,061	872	32,970	32,977	7,456	6,787	368	4,884	4,966	971	820	10,524	25,045	24,469	75.9	74.2	7,925	2,292	3,968	3,893
Monongahela	Sept.	178	1,051	....	1,055	646	97	93	12	72	80	12	1	212	389	427	36.9	66.0	666	264	245	51
	9 mos.	178	6,029	....	6,058	5,951	1,099	808	402	635	724	90	9	2,031	3,855	3,824	63.6	64.3	2,203	575	357	500
Montour	Sept.	51	269	....	271	269	38	29	3	79	64	19	1	76	204	198	75.4	73.5	66	61	85	62
	9 mos.	51	2,006	....	2,014	1,703	292	203	24	697	645	172	9	633	1,722	1,660	85.5	97.5	292	457	452	352
Nashville, Chatt. & St. Louis	Sept.	1,032	2,914	123	3,358	3,608	485	619	64	517	448	136	119	1,157	2,394	2,454	71.3	68.0	964	476	498	596
	9 mos.	1,032	26,010	1,337	30,304	30,342	4,645	5,222	464	4,440	4,266	1,190	1,064	10,268	21,548	21,891	71.1	72.1	8,756	4,341	4,446	4,239
New York Central	Sept.	10,716	51,085	9,093	69,438	71,214	9,644	12,594	1,047	14,058	12,829	2,348	1,099	28,366	56,511	57,624	81.3	80.9	12,927	5,396	5,733	7,653
	9 mos.	10,716	461,152	87,281	624,221	587,774	85,683	84,010	8,603	125,714	121,531	21,114	9,916	261,676	513,348	504,739	82.2	85.9	110,872	51,026	46,846	28,153
Pittsburgh & Lake Erie	Sept.	221	3,817	74	4,075	4,332	515	566	47	1,050	1,041	276	72	1,287	3,160	3,245	77.5	74.9	915	857	1,231	1,186
	9 mos.	221	35,844	638	38,474	32,347	4,793	4,105	420	9,557	9,376	2,474	667	12,473	29,598	27,860	76.9	86.1	8,876	6,798	10,636	6,958
New York, Chicago & St. Louis	Sept.	2,185	13,298	129	14,901	15,078	1,743	1,608	178	2,280	2,152	337	294	4,782	9,545	9,249	68.2	61.3	4,456	2,294	1,806	2,487
	9 mos.	2,184	120,622	1,436	126,585	117,305	15,120	14,459	1,400	19,878	18,763	2,896	2,809	43,366	85,291	80,971	67.4	69.0	41,294	20,717	16,968	15,705
New York, New Haven & Hartford	Sept.	1,771	8,053	4,169	13,959	13,784	2,133	2,081	246	2,075	2,075	394	188	5,825	10,952	10,793	78.5	78.3	3,008	1,032	1,034	1,008
	9 mos.	1,780	72,101	38,250	123,800	119,975	19,814	18,208	2,502	18,148	18,959	3,467	1,688	52,245	98,813	96,577	79.8	80.5	24,988	9,814	7,243	6,624
New York Connecting	Sept.	21	265	....	298	276	134	135	25	20	21	....	....	78	235	225	78.6	81.3	64	76	—20	—34
	9 mos.	21	2,866	....	3,110	2,894	834	849	225	228	238	....	....	814	1,904	1,846	61.2	63.8	1,206	679	506	413
New York, Ontario & Western	Sept.	541	584	4	604	655	146	149	18	81	85	23	24	272	552	556	91.3	84.9	53	38	—78	—13
	9 mos.	541	5,251	43	5,445	5,240	1,179	1,113	161	788	743	204	219	2,412	4,869	4,735	89.4	90.4	576	330	—438	—397
New York, Susquehanna & Western	Sept.	120	422	39	493	530	58	61	5	57	56	12	7	204	357	358	72.5	67.5	135	35	37	99
	9 mos.	120	3,775	359	4,363	4,112	516	518	48	537	528	107	73	1,855	3,228	3,171	74.0	77.1	1,135	323	391	331
Norfolk & Western	Sept.	2,135	15,794	383	16,867	17,576	2,170	2,588	294	3,345	3,225	651	327	4,794	11,271	11,670	66.8	66.4	5,596	3,821	3,011	3,125
	9 mos.	2,135	132,473	3,765	142,184	147,283	20,735	21,256	2,598	30,320	32,056	5,690	2,744	43,016	102,571	105,175	72.1	71.4	39,613	27,881	20,194	20,517
Norfolk Southern	Sept.	620	1,018	....	1,032	1,041	186	198	13	115	118	26	49	280	695	804	67.4	77.2	337	165	102	75
	9 mos.	620	8,199	....	8,318	8,747	1,802	1,772	118	1,078	1,064	240	436	2,432	6,347	6,720	76.3	76.8	1,971	974	629	693
Northern Pacific	Sept.	6,880	15,091	570	16,804	17,755	2,656	2,155	238	2,929	2,712	433	349	5,736	12,402	11,601	73.8	65.3	4,402	2,469	1,977	2,716
	9 mos.	6,880	119,283	5,910	135,411	129,775	23,983	22,469	2,376	25,543	25,445	3,790	3,135	51,144	110,381	106,648	81.5	82.2	25,030	15,643	11,563	9,942
Northwestern Pacific	Sept.	331	1,019	5	1,067	1,173	229	256	18	93	105	4	6	378	724	852	67.9	72.7	343	109	55	47
	9 mos.	331	9,530	31	9,989	9,987	2,693	2,340	200	985	943	38	50	3,499	7,424	7,305	74.3	73.1	2,565	739	542	436
Oklahoma City-Ada-Atoka	Sept.	132	74	....	75	104	23	18	2	1	2	....	2	19	49	51	65.9	48.7	25	8	3	17
	9 mos.	132	793	....	798	879	196	205	22	12	37	....	17	182	440	501	55.1	57.1	359	126	124	111
Pennsylvania	Sept.	10,083	66,489	10,926	86,759	90,768	12,209	12,331	1,362	19,657	21,276	2,884	1,294	35,538	72,030	74,782	83.0	82.4	14,729	6,176	6,095	7,498
	9 mos.	10,085	605,695	107,349	791,573	750,751	105,647	96,316	12,549	174,893	165,888	25,944	11,861	324,517	648,534	632,582	81.9	84.3	143,039	61,573	63,829	55,522
Pennsylvania-Reading Seashore Lines	Sept.	364	724	247	1,006	954	332	214	133	109	96	22	12	572	1,070	1,007	106.3	105.6	—64	125	—380	—305
	9 mos.	364	5,750	1,785	7,797	7,643	2,066	1,906	327	941	882	170	100	5,031	8,483	8,488	108.8	111.0	—686	1,041	—2,994	—3,059

(Table continued on page 76)

AMCRECO
PRESSURE TREATMENT means Longer Service Life Reduced Maintenance Costs

In Amcreco cross ties, bridge timbers and piles, Lowry Process Pressure Treatment makes the big difference. The natural strength of the wood is preserved to assure long dependable service.

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- **Bridge Ties**
- **Timbers**
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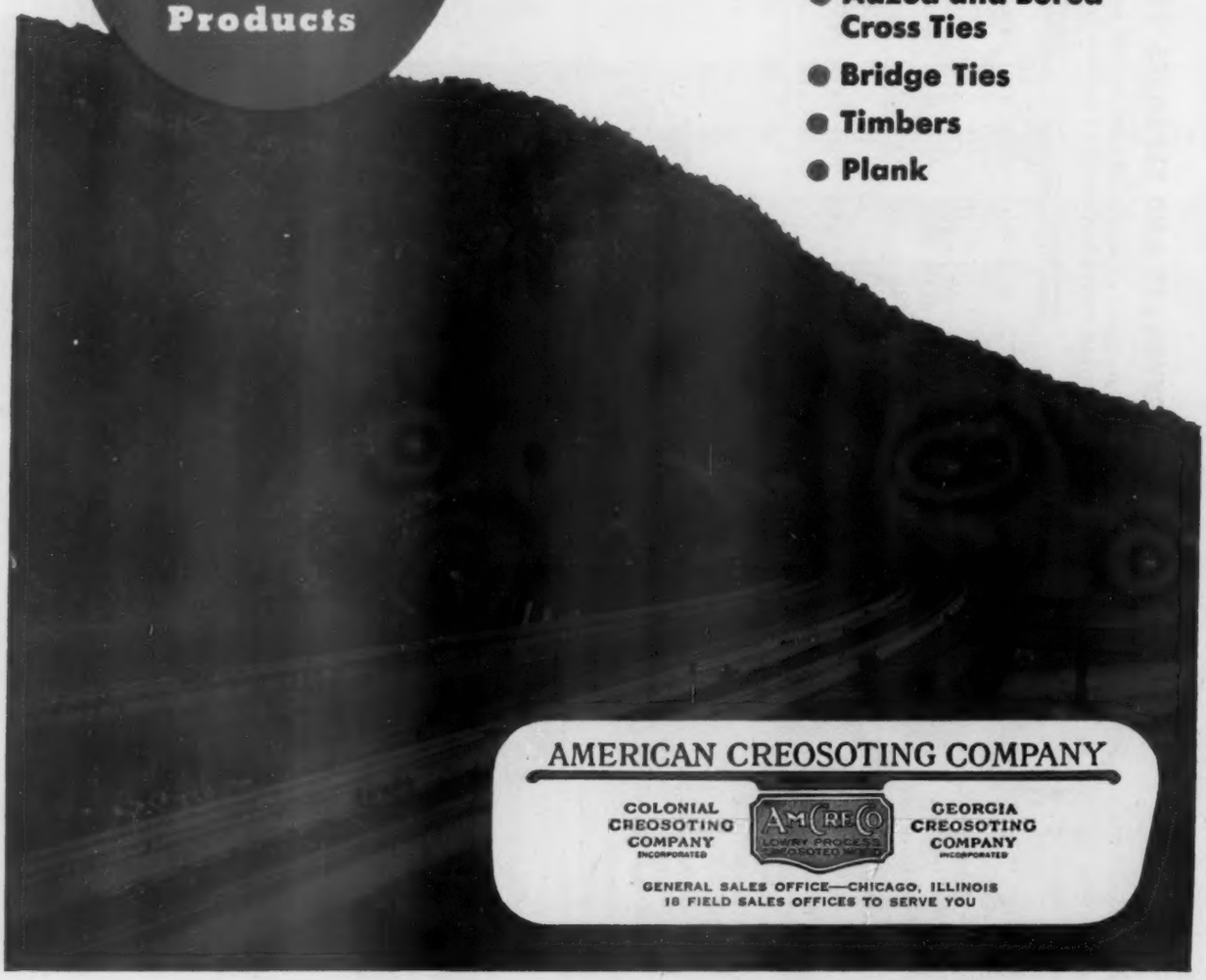

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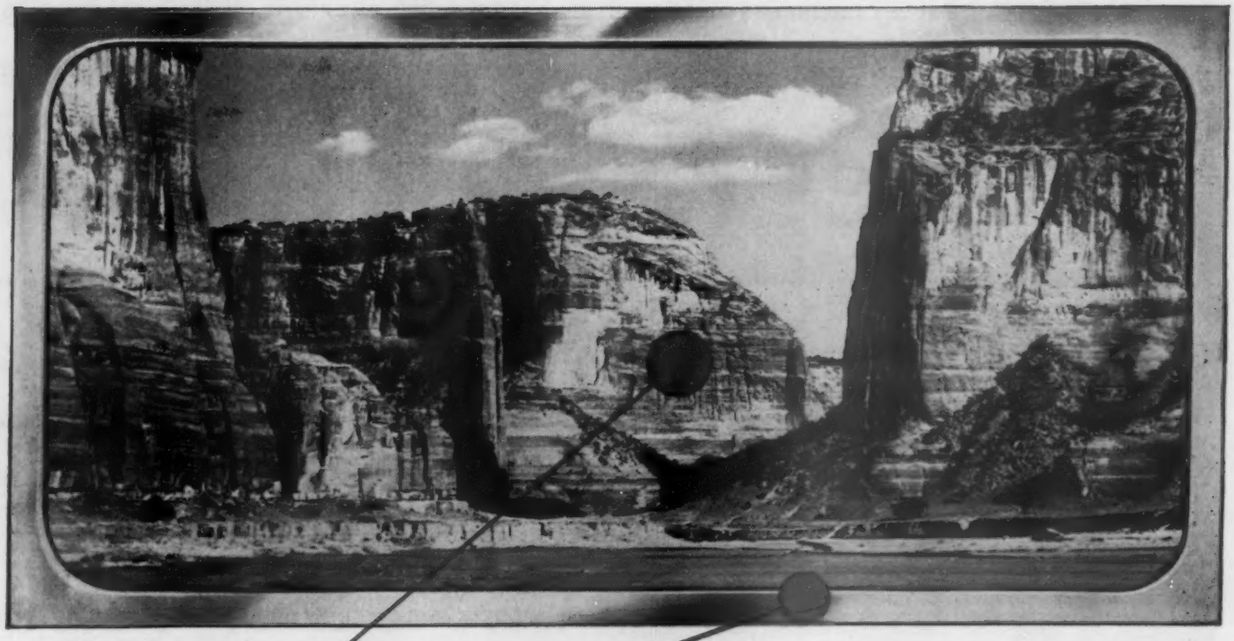

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Visibility, Unlimited!

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Yes, with absolutely no maintenance whatever except routine washing, ADLAKE "Breather" Windows stay crystal-clear regardless of temperature, humidity or altitude changes!

Windows are kept clear by the exclusive ADLAKE "Breather"—there are no dehydrants to change! And finally, panes which are broken in service can be replaced right on your own property . . . they do not have to be returned to the factory!

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REVENUES AND EXPENSES OF RAILWAYS

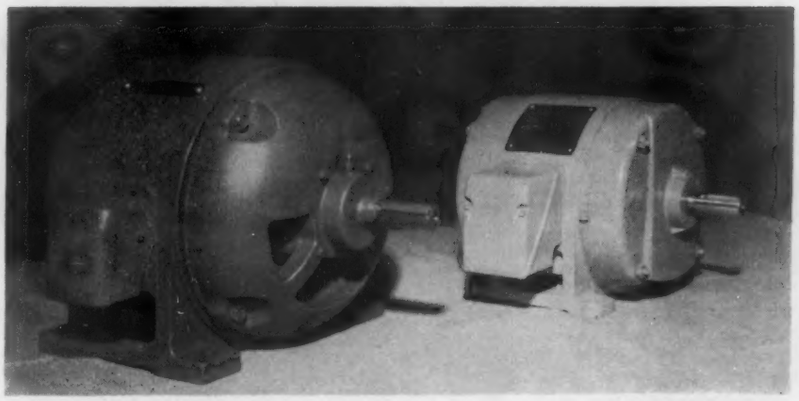
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1953

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1953	Total (inc. misc.) 1952	Operating Expenses: Maint. Way and Structures: Total 1953	Total 1952	Deprec. and Retirements	Maint. Equipment: Total 1953	Total 1952	Deprec. and Retirements	Traffic	Transportation	Total 1953	Total 1952	Operating ratio 1953	Operating ratio 1952	Net from railway operation	Railway tax accruals	Net railway operating income 1953	Net railway operating income 1952
Pittsburg & Shawmut	Sept.	97	210	....	211	236	56	61	4	47	40	9	4	53	171	174	81.0	73.8	40	7	58	79
	9 mos.	97	1,808	....	1,813	1,680	445	327	33	444	460	78	33	468	1,478	1,359	81.5	80.9	335	49	552	505
Pittsburgh & West Virginia	Sept.	132	711	....	714	853	149	161	24	189	168	35	60	181	616	601	86.3	70.4	98	48	82	150
	9 mos.	132	6,946	....	6,994	6,276	1,225	1,051	212	1,632	1,526	318	517	1,652	5,337	4,919	76.3	78.4	1,657	791	1,083	942
Reading	Sept.	1,310	9,711	537	10,891	11,549	1,628	1,800	190	2,176	2,108	428	151	3,970	8,336	8,509	76.5	73.7	2,554	1,178	1,406	1,609
	9 mos.	1,310	89,110	5,197	100,180	95,848	15,057	14,345	2,007	20,231	18,970	3,863	1,368	36,733	77,037	75,183	76.9	78.4	23,143	10,758	12,793	10,979
Richmond, Fredericksburg & Potomac	Sept.	118	1,232	454	1,978	1,933	366	329	28	311	316	66	22	659	1,484	1,471	75.0	76.1	495	269	142	151
	9 mos.	118	13,071	5,157	20,989	21,598	3,427	3,076	226	2,682	2,742	521	217	6,485	14,129	13,717	67.3	63.5	6,860	3,338	2,413	2,564
Rutland	Sept.	392	423	....	474	533	88	74	29	56	74	14	21	180	371	461	78.3	86.5	103	25	50	21
	9 mos.	368	3,150	105	3,746	4,245	686	723	106	566	723	125	197	1,731	3,426	3,957	91.5	93.2	320	235	—118	—127
Sacramento Northern	Sept.	265	295	....	306	416	74	67	4	12	15	4	2	111	211	206	68.9	49.5	95	18	48	163
	9 mos.	265	3,644	....	3,709	2,131	538	580	—13	189	133	36	20	783	1,619	1,621	43.6	76.1	2,090	740	1,140	191
St. Louis-San Francisco	Sept.	4,601	9,585	450	10,875	11,257	1,630	1,717	189	1,758	1,723	488	355	3,764	8,033	7,988	73.9	71.0	2,842	1,579	1,215	1,740
	9 mos.	4,601	85,141	4,519	97,014	93,220	14,903	15,106	1,531	15,864	15,601	4,285	3,037	34,532	73,041	71,664	75.3	76.9	12,973	12,289	10,883	11,163
St. Louis, San Francisco & Texas	Sept.	159	249	2	265	415	60	50	4	31	33	1	25	170	298	262	112.3	63.1	—33	Cr. 77	6	119
	9 mos.	159	3,757	56	4,001	4,122	551	449	38	340	330	10	227	1,454	2,672	2,452	66.8	59.5	1,330	550	383	586
St. Louis Southwestern Lines	Sept.	1,561	5,052	28	5,278	6,242	1,059	774	85	732	656	106	171	1,567	3,710	3,453	70.3	55.3	1,569	641	707	1,290
	9 mos.	1,566	53,477	223	55,514	53,820	9,284	6,690	631	6,247	5,788	937	1,519	14,907	33,572	30,647	60.5	56.9	21,942	11,454	8,062	9,201
Seaboard Air Line	Sept.	4,079	9,331	836	11,095	11,565	1,542	1,558	202	2,067	2,379	524	357	3,623	8,067	8,551	72.7	73.9	3,028	1,248	1,790	1,630
	9 mos.	4,080	99,207	10,987	119,417	121,108	18,463	17,852	1,728	20,882	21,574	4,630	3,350	37,593	85,152	86,599	71.3	71.5	34,265	14,334	18,254	16,912
Southern	Sept.	6,289	19,884	1,491	23,092	23,258	3,041	3,002	400	4,156	3,988	802	422	6,807	15,405	15,472	66.7	66.5	7,686	4,038	3,411	3,238
	9 mos.	6,298	178,638	13,812	207,380	200,108	27,333	26,459	2,518	36,507	37,017	6,837	3,845	63,216	139,333	142,010	67.2	71.0	68,047	33,855	30,927	24,131
Alabama Great Southern	Sept.	326	1,374	83	1,587	1,648	259	224	52	328	397	70	31	464	1,155	1,195	72.8	72.5	432	150	255	174
	9 mos.	326	13,353	755	15,141	14,461	2,193	2,126	276	3,115	3,408	643	307	4,431	10,650	11,035	70.3	76.3	4,491	1,953	2,236	1,172
Cinn., New Orleans & Tex. Pacific	Sept.	337	3,322	173	3,635	3,644	432	454	41	724	796	171	69	896	2,252	2,373	62.0	65.1	1,383	880	607	625
	9 mos.	337	32,575	1,709	36,050	33,318	3,962	4,130	311	7,268	7,646	1,573	658	8,690	21,763	22,400	60.4	67.2	14,287	8,408	6,488	4,710
Georgia Southern & Florida	Sept.	397	598	60	727	678	179	139	7	61	69	7	8	238	533	442	73.3	65.2	194	18	14	56
	9 mos.	397	6,143	701	7,456	6,825	1,501	1,434	85	664	623	62	71	2,190	4,690	4,373	62.9	64.1	2,765	687	558	613
New Orleans & Northeastern	Sept.	203	980	51	1,085	1,110	166	172	19	131	128	25	19	212	580	579	53.4	52.2	506	278	178	188
	9 mos.	203	9,405	476	10,407	8,943	1,477	1,407	152	1,125	1,136	225	177	2,025	5,225	5,200	50.2	58.1	5,181	2,880	1,839	1,190
Southern Pacific	Sept.	8,113	39,538	3,214	46,000	49,853	5,187	5,472	521	9,619	9,202	1,795	841	17,207	34,863	35,415	75.8	71.0	11,136	5,661	4,349	5,939
	9 mos.	8,113	359,620	30,075	417,606	410,346	49,552	47,529	3,983	85,384	82,242	15,530	7,727	156,734	317,823	309,033	76.1	75.3	99,783	49,683	36,977	41,881
Texas & New Orleans	Sept.	4,290	10,143	599	11,499	12,711	1,828	1,755	122	1,590	1,587	88	270	4,035	8,286	8,429	72.1	66.3	3,213	1,401	789	1,403
	9 mos.	4,290	97,963	5,686	110,450	109,374	18,681	16,636	1,172	14,727	15,468	775	2,474	37,543	78,682	78,121	71.2	71.4	31,768	13,936	9,161	9,635
Spokane International	Sept.	152	314	1	331	296	65	63	2	24	23	10	6	80	188	168	56.7	56.8	143	43	65	57
	9 mos.	152	2,518	8	2,643	2,203	552	560	20	209	194	76	49	624	1,536	1,492	58.1	67.7	1,107	386	532	379
Spokane, Portland & Seattle	Sept.	944	2,514	80	2,733	2,912	455	413	45	393	324	99	26	808	1,777	1,681	65.0	57.7	957	103	689	705
	9 mos.	944	22,124	803	24,188	23,294	3,498	3,743	380	3,223	2,956	865	263	7,264	15,089	14,840	62.4	63.7	9,099	3,083	4,969	4,637
Tennessee Central	Sept.	286	382	2	407	535	83	62	7	62	61	22	12	132	312	308	76.5	57.6	96	25	30	123
	9 mos.	286	3,567	33	3,820	3,910	819	843	50	604	587	190	107	1,267	3,008	3,008	78.7	76.9	812	232	261	339
Texas & Northern	Sept.	8	119	....	124	105	4	5	....	6	11	2	1	10	26	47	20.7	44.4	98	49	26	16
	9 mos.	8	1,084	....	1,155	963	44	50	1	66	81	21	9	98	265	399	22.9	41.4	890	441	260	171
Texas & Pacific	Sept.	1,834	6,306	338	7,141	7,142	1,030	881	87	912	1,035	241	191	2,115	4,583	4,514	64.2	63.2	2,557	1,047	1,232	1,463
	9 mos.	1,834	57,637	3,280	65,681	61,132	9,345	8,572	977	10,242	10,239	2,177	1,730	20,138	44,543	42,680	67.8	69.8	21,139	8,051	9,557	8,730
Texas Mexican	Sept.	161	237	....	252	272	46	61	6	30	43	8	9	60	167	192	66.3	70.5	85	44	16	27
	9 mos.	161	2,409	....	2,552	2,610	488	616	56	289	306	74	81	574	1,622	1,714	63.6	65.7	930	429	286	306
Toledo, Peoria & Western	Sept.	239	669	....	683	598	102	105	6	87	42	10	50	139	417	360	61.0	60.2	266	136	76	83
	9 mos.	239	5,758	....	5,871	5,018	1,009	889	57	470	417	89	442	1,211	3,464	3,161	59.0	63.0	2,407	1,187	755	620
Union Pacific	Sept.	9,822	41,542	3,024	48,054	50,378	6,104	5,746	552	8,446	8,036	1,276	913	16,558	34,258	32,975	71.3	65.5	13,796	7,244	3,589	5,486
	9 mos.	9,824	335,159	28,314	393,530	374,242	55,849	55,873	5,224	74,719	68,356	11,091	8,738	140,084	299,623	286,058	76.1	76.4	93,906	56,724	20,284	19,413
Utah	Sept.	110	134	....	134	148	19	40	2	33	37	9	1	38	99	136	73.8	91.4	35	8	30	18
	9 mos.	110	925	....	928	1,067	171	216	17	368	417	82	7	319	938	1,215	101.1	113.8	—10	87	—4	—131
Virginian	Sept.	611	3,200	1	3,289	3,761	530	462	58	791	760	190	46	824	2,277	2,172	69.2	57.8	1,013	705	661	771
	9 mos.	611	27,793	15	28,621	33,846	3,993	4,381	523	6,644	7,827	1,619	413	7,176	19,055	21,316	66.6	63.0	9,565	6,258	5,472	6,310
Wabash	Sept.	2,393	9,460	402	10,694	9,412	1,354	1,345	121	1,392	1,226	377	317	4,263	7,708	7,077	72.1	75.2	2,986	1,069	1,268	1,030
	9 mos.	2,393	80,106	3,861	90,792	83,087	11,640	11,335	1,025	11,802	11,445	3,302	2,709	37,084	66,665	63,006	73.4	75.8	24,126	9,252	9,865	7,975
Ann Arbor	Sept.	294	716	....	736	298	111	94	25	140	92	30	27	340	639	378	86.8	127.1	97	34	29	—17
	9 mos.	294	6,928	1	7,092	5,400	927	942	88	1,119	1,013	269	249	2,823	5,311	4,648	74.9	86.1	1,781	792	782	396
Western Maryland	Sept.	873	3,987	3	4,199	4,232	522	522	47	738	831	202	96	1,137	2,691	2,856	64.1	67.5	1,509	827	980	857
	9 mos.	873	36,320	57	38,328	34,760	4,906	4,143	440	6,442	7,324	1,703	826	10,886	24,746	25,056	64.6	72.1	13,582	7,356	8,109	5,986
Western Pacific	Sept.	1,193	4,695	242	5,055	5,345	748	980	90	657	616	153	193	1,369	3,204	3,488	63.4	65.3	1,851	781	1,028	736
	9 mos.	1,193	41,537	2,482	45,083	39,696	7,510	6,977	810	6,028	5,820	1,237	1,724	12,689	30,202	28,762	67.0	72.5	14,881	7,181	6,513	4,435
Wisconsin Central	Sept.	1,046	2,485	37	2,694	2,854	336	369	36	389	419	72	69	989	1,879	2,046	69.7	71.7	815	277	348	439
	9 mos.	1,046	22,709	418	24,583	22,872	3,530	3,402	328	3,952	3,926	615	627	9,341	18,368	18,471	74.7	80.8	6,216	2,095	2,589	1,726

(Table continued from page 73)

What's New in Products



Smaller, Quieter Motors

A new line of polyphase a.c. motors, offering better protection, more efficiency, and quieter operation has been announced by the General Electric Company's Small Integral and Medium Induction Motor Departments, Schenectady, N. Y.

Called Tri-Clad 55, the motors are built to standard N.E.M.A. frame dimensions and feature a number of improvements of design.

With an average size reduction of 50 per cent by volume and averaging 22 per cent less weight per horsepower, the motor retains rigid cast-iron construction and incorporates a new insulation system, bearing assembly, and ventilation plan.

The insulation incorporates a polyester film which is said to be eight times as strong as previously used materials. It is used to insulate the phases and slot tubes in the stator—the points of hardest motor wear. This synthetic material, combined with Formex wire, an improved Glyptal varnish, and a silicon Dri-film dip, has effectively withstood accelerated life tests and salt-spray tests.

The bearing assembly is more tightly sealed than that of previous designs and is lubricated by a grease which tests indicate will last at least five times longer than formerly used lubricants. A double-end ventilation system uniformly cools the motor by drawing air in from beneath both endshields, through baffled air passages, and out louvers on the sides of the frame. Larger integrally cast rotor fans increase the cooling air flow through the motor and dissipate rotor heat more effectively. Protection has been increased on the drip-proof enclosure through new end-shield and frame design.

A major part of the new motor design involves noise levels. According to G. E. engineers, the noise level of the 10-hp. motor tests as low as the former 2-hp. model.

The totally enclosed fan-cooled motor also has been redesigned. Electrical parts are completely enclosed by a tightly sealed cast-iron frame and end shields, a compression-fit lead seal, and a rotating labyrinth seal on the shaft. The ventilation system blankets the frame with cooling air. Plastic fan, stainless steel nameplate, and other exposed parts are corrosion-resistant.

Other improved maintenance features include permanently numbered, non-wicking connection leads, a larger diagonally split conduit box, knock-off lugs on the end shields, and location of the combination nameplate-connection diagram directly over the box.

After the first of the year, the new motors will be available in 182 and 184 frame sizes (1, 1½, and 2 hp. at 1,800 r.p.m.) in horizontal drip-proof and totally enclosed fan-cooled models, and a complete line of gear-motors. Larger frame sizes will become available at regular intervals.

Other types planned for production during 1954 include vertical, single-phase, wound-rotor, explosion-proof, multi-speed, face-mounted and flange-mounted models•

Decorative, Protective Floor Coating

Colorflex Plus AWA is reported to resist the alkali content of cement and not to be affected by storage battery acid, lactic acid, fruit or vegetable acid. The manufacturer also claims that it cannot be softened by water, mineral oils, grease or gasoline.

This compound was developed to create a decorative and protective coating for floor surfaces such as wood, brick, composition and others. The formulation is suitable for use on practically all surfaces—inside or outside—in plants, factories, engine rooms, washrooms, etc. Its penetrating synthetic

resin base is said to solve the difficult problems of painting concrete.

It is available from the Flexrock Company, Philadelphia 1, in red, gray, brown, clear and green colors •

Storage Bin Stock Cabinet

This cabinet, the M-100, has been designed for storage of heavy duty hose and reusable couplings for maintenance of hydraulic, compressed air, oil and fuel lines. The unit, introduced

by the Weatherhead Company, Cleveland 8, may be used as a field service bin or shop stock container. It has six bins for heavy duty hose, up to 300 ft., of varying diameters and 28 compartments for up to 250 couplings and adapters. Of all-steel construction, it has a durable black crinkle finish. It is 29 in. wide, 29 in. deep and 33 in. high. A separate dolly, equipped with casters, is available to make it easily movable if desired •

Time-Delay Relay For Pushbutton Operation

For control circuits requiring a time delay initiated by a momentary impulse, such as that from a pushbutton or microswitch, a new Agastat time-delay relay has been developed by the A'G'A Division, Elastic Stop Nut Corporation of America, Elizabeth, N.J. It is a lightweight, compact relay with pneumatically controlled time delay adjustable over a range from 0.1 second to 10 minutes, or more. It is available for all standard a.c. and d.c. voltages, in single-pole, double-throw, or double-pole, double-throw models •

Solvent Spray Gun

Continuous spray cleaning by solvent, emulsion or aqueous solutions is said to be made easier with the new model B-202-M siphon spray gun manufactured by the John B. Moore Corporation, Nutley, N.J. Suggested uses are cleaning electric motor parts and stator frames, engines and engine compartments and other mechanical equipment. The gun is designed to draw cleaning fluid directly from a 55-gallon drum and eliminates time needed to refill small supply can reservoirs •

Fire Extinguisher Locator Decals

Decal transfer sets for use on various types of fire extinguishers and wall mountings have been introduced. Each set includes a larger decal, 9 in. by 8 in. that is placed high on the wall or nearby object above the extinguisher so that it is clearly visible and a smaller decal, 1¾ in. by 2 in. and a miniature of the larger, that is placed immediately on the extinguisher.

Three different sets are available from the Meyercord Co., Chicago 44, for the three standard types of fire extinguisher materials. Identification for storage and use of the extinguisher is established through variation in design, color and copy. The decals are fade-resistant and are suitable for indoor and outdoor use •

Mechanical Drill Jack

This portable device is a tool for many construction and maintenance jobs, such as lifting, temporary bracing, shoring, weld positioning, or jacking to set permanent forms or braces. A worker can exert a force up to 2,000 lb. where more than 100 lb. pressure is required for drilling holes in concrete or steel.

Manufactured by Time Saver Tool Company, Cleveland 14, and called the Model 51A Dril-Jak, it has a universal drill motor clamp which holds a regular drill motor in correct alinement. The tool can be operated in confined space or can easily be extended to as much as 25 ft., with coupled extension sections. Length of the unit is 34½ in., its maximum lift is 30 in., and its weight is 9½ lb. •

48 MONTHS HAULING SODA ASH . . .

and the Glidden Vinyl-Cote finish is still excellent!

Talk about a finish that gives extra-long service! This car has had the full "torture" treatment. Its sides have been beaten by sledges and crowbars . . . corrosive soda ash has all but obliterated the conventional lead and oil stencil type paint used for identification . . . yet, after 41 months, the Glidden Vinyl-Cote finish still is in excellent condition . . . good for many more months of service.

An unusual example? Not at all. That's the type of result you, too, can expect when your cars are properly finished with Glidden Vinyl-Cote, the revolutionary car finish that handles most strong alkalies and acids with ease.

There are no special application problems, either, when you use the Glidden Vinyl-Cote System. Under normal outdoor conditions, a car can be finished in a single day. And Vinyl-Cote dries to a hard, yet elastic film that will give many times the usual coating service life.

For complete information about the Glidden Vinyl-Cote System and the competent technical service for adapting it to your specific requirements, write to: The Glidden Company, Railway Finishes Division, Dept. RA-1153, 11001 Madison Avenue, Cleveland 2, Ohio. In Canada, The Glidden Company, Toronto.

QUALITY Glidden PRODUCTS

Glidden

RAILWAY FINISHES

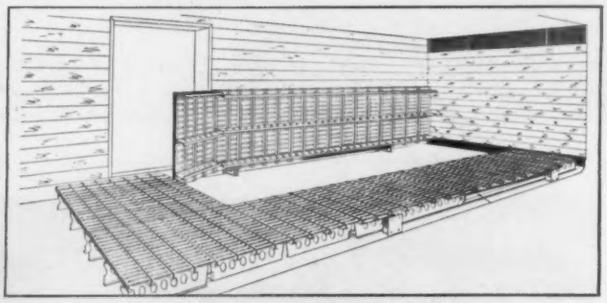
Printed in U. S. A.

6 New Ways

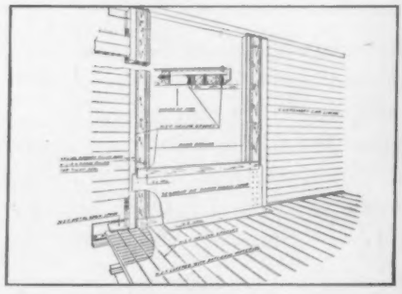
to use steel for improving freight service

Tomorrow's standard in floors—and already in use by over 50 railroads—Nailable Steel Flooring, the floor with the unique nailing groove. Moderately higher than other materials in original costs, N-S-F opens new avenues for reducing operating expenses—and more than pays for itself.

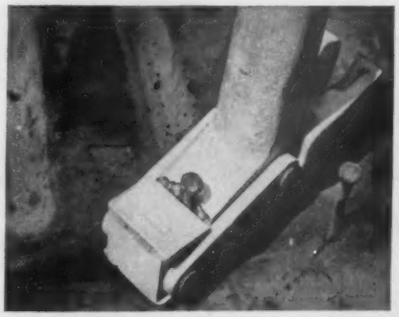
Permanent anchoring devices for flatcar loads—N-S-F with Multi-Position Holddown Fixtures—scientifically spaced channels with recessed rings or other types of anchoring devices. They provide maximum security with least time and trouble in loading. A new means to attract freight.



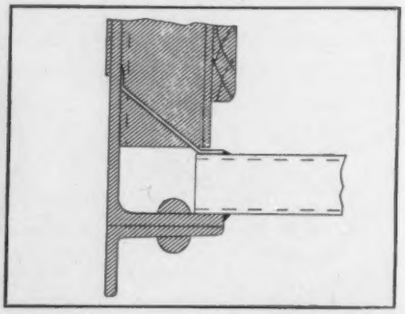
One-man racks for reefers—N-S-F Refrigerator Car Floor Racks—strong, light gauge steel, spring-hinged—withstand all loading operations, yet permit efficient cleaning—easily lifted by one man. Easily maintained too, because there's little to go wrong. Improves versatility of reefer use.



Boxcar doorpost section built on the unique N-S-F principle—takes repeated nailings without maintenance or replacement, strengthens door area—gives maximum protection to lading. An effective claim preventive.



N-S-F nail puller—makes quick job of clearing floors of nails too often left standing when blocking is removed. Saves time, protects packaged freight. Facilitates the "Clean Car" program.



Metal grain strip—welded or riveted to wall and to Nailable Steel Flooring. Assures tight car, clean and vermin-proof—guards against lading loss and damage. Another claim reducer.

N-S-F for NAILABLE STEEL FLOORING

PATENTS PENDING

GREAT LAKES STEEL CORPORATION

Steel Floor Division — Ecorse, Detroit 29, Michigan

NATIONAL STEEL CORPORATION

PRODUCER OF NAX HIGH-TENSILE STEEL

Sales Representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

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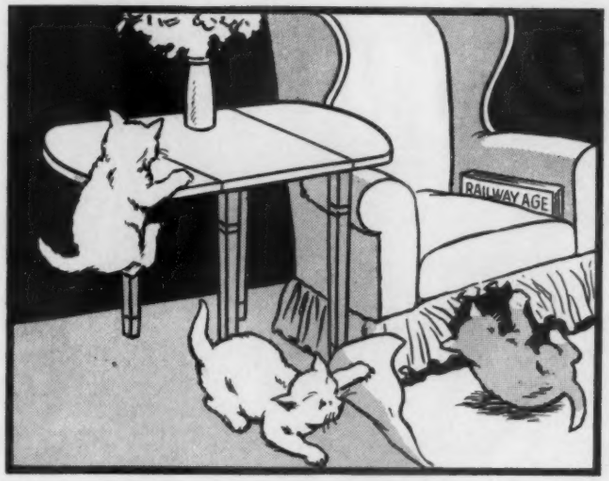


The three little kittens
Lost their Railway Age
And when they got home
Their mother said
What have you done with
Your Railway Age
We dropped it on the way home
Oh dear, oh dear, what shall
Father do without his Railway Age

We couldn't resist the above limerick (?) which is the result of the imagination of an 8 year old youngster.

Even at that age apparently, one can appreciate the value of *Railway Age* to the working, professional railroader. For indeed, what would his father do without the only railway newsmagazine that keeps him abreast of his industry's developments.

This sort of father-to-son attachment to *Railway Age* is nothing new. Many of today's prominent railroad men were first introduced to the "Bible of the Industry" while still in school . . . they read their dad's copies.

If you have a future railroad man in *your* family, why not get him started right. Get your own personal copies of *Railway Age* coming to you *at your home* every week. Maybe mom, too, would like to know more about this fascinating business of railroading of which you are an important part. The coupon below will do the trick.

Railway Age 11-16-53
30 Church Street, New York 7, N. Y. Att'n: R. C. Van Ness

Please send Railway Age to me every week:

☐ for one year $4 ☐ Payment enclosed
☐ for two years $6 ☐ Bill me after service begins

Name .....

Home Address .....

City ..... Zone ..... State .....

Railroad .....

Dept. ..... Title .....

Above rates apply TO RAILROAD MEN ONLY (in the U. S., Canada and Mexico)

This week's offering submitted by L. Lewis of New Jersey. $5 to him . . . another to the next one sending us one we use.

Benchmarks and Yardsticks

THERE ARE SOME PEOPLE in the railroad business who, unfortunately, seem to be lacking in optimism about the industry's future. There are some superficial symptoms which could be used as a plausible justification for such a view—which is all the more reason why those railroad men who know better should speak out whenever they can.

Actually, the need of the nation for an enormous volume of heavy transportation service—which only railroads can provide at a cost within the nation's means—is growing as fast as the population, and even faster. The railroads for many years were engaged in the retail transportation business, as well as wholesale; and they are turning over to others a lot of the retail jobs which newcomers can do better than they can.

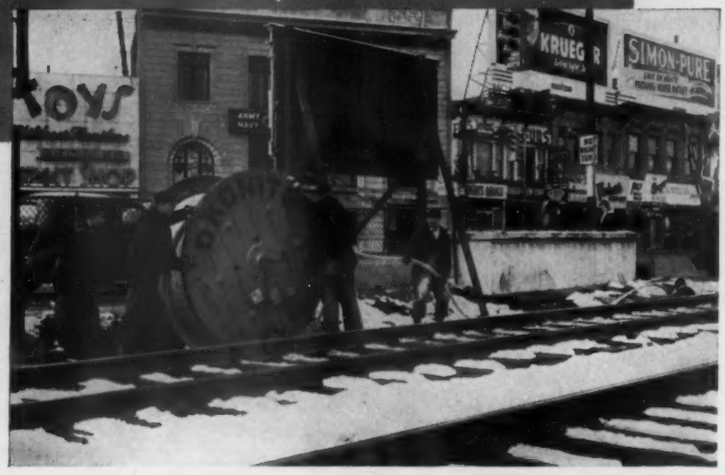
But just consider the improvements that are constantly being made to gear railroad service more firmly then ever to the efficient performance of the bulk of the nation's transportation requirements. Consider the more effective utilization of manpower and fuel that has come with the miraculously rapid improvement in motive power; and the changes in yards which are being made to maximize the economic performance of the new motive power.

Add to this the rapid development which is occurring in rolling stock to provide easier riding qualities; and the improvements in communication facilities which are coming along so fast that the novelty of a few years ago is today's commonplace. Except for space limitations, similar progress could be reported in almost every aspect of the railroads' methods and technology.

Lastly—but by no means least important—there are coming along the rate adjustments needed to fit the railroads more attractively into today's highly competitive transportation market. The changes in the rates on iron and steel products in the South—noted briefly in our last week's issue—is only one instance of many which have been or are being studied, and which should, eventually, assure the railroads of all the tonnage for which they continue to possess the "inherent advantage"—and that is a lot of tonnage.

There isn't anything fundamental about the future of the railroads that should be the least bit discouraging to anyone. On the contrary—because, whereas the future of most business depends on developing new markets, that of the railroads can readily go forward, merely by improving the adjustment to a market which is "already there." The best days the railways have ever experienced, quite likely, lie ahead. Or, at any rate, the courage and resourcefulness of railroad men can readily make them so. J.G.L.

ERIE SELECTS OKONITE POWER AND SIGNAL CABLE



Service-proved Okonite combination power and signal cable being installed in the conduit was selected for resistance to extremes of Eastern climate. The insulation is applied by the strip process and vulcanized in a continuous metal mold to provide a uniform cure throughout the entire length of cable. This assures better physical and electrical characteristics than can be obtained by any other method.

In Passaic, N. J., the Erie Railroad recently removed the old gate towers and manually controlled crossing gate system and installed 13 new automatically controlled gates. The instrument cases are wired with Okonite signal control wires at 13 crossings and the combination power and signal cable the men are shown installing is another Okonite product.

Every automatic crossing along your right of way will benefit from the circuit security provided by Okonite cables and wires. Your maintenance costs will decrease, and good will should increase. Why not profit from the experience of over 100 Class 1 roads and transportation systems and install Okonite?

For information on Okonite railroad wires and cables consult your local representative or write
The Okonite Company, Passaic, N. J.

The Okoprene sheath protecting the Okonite signal control wires specified for this instrument case will not permit end leakage and need not be removed at terminal ends. Thus, the completely protected rubber insulation is not exposed to the elements and will not check or crack. A substantially increased service life is the result.

OKONITE SINCE 1878 *insulated cables*

75th ANNIVERSARY

1725

How to Price the Railroads *Into* the Market

Several members of the Interstate Commerce Commission have indicated in recent public statements their concern over the fact that their principal job, now, is no longer that of regulating a transportation monopoly—but, instead, that of regulating a highly competitive business.

Competition in transportation is, in fact, being heavily regulated—and not apparently, so far, with full appreciation on the part of most of those being regulated, and perhaps not even by all of the regulators themselves, of the complex and vital economic problem which confronts them. There seems to be, generally speaking, only the dimmest kind of awareness of the fact that each type of transportation has economic characteristics which differ deeply from those of the other types; and that these differences are nowhere so pronounced or so important as between railway and (long haul) truck transportation.

Different Economic Forces . . .

The unusual economic characteristics of truck transportation were ably described and analyzed (as noted in this space two weeks ago) in an article by Professor Dudley F. Pegrum of the University of California in the publication, Land Economics, of August 1952. Now, in the September 1953 issue of the Journal of the Institute of Transport (Great Britain), J. R. Pike, a practical traffic officer, has shed further light on the great contrast between the economic forces which established the historic pricing practices of the railways, and the big differences in the approach to pricing which other economic forces have brought about in truck transportation. Anyone with a serious interest in this subject—either as a regulator or as the regulated—will do himself (and, quite likely, his understanding) a considerable favor if he will study carefully what these two discerning authors have to say.

Mr. Pike in his article outlines the valid reasons for the original introduction of "value of service" considerations into railroad rate-making; and also for the further refinements which came along to prohibit "undue preference" and to fortify the tendency to equal rates for equal mileage, regardless of differing circumstances. "There are many who support this system," Mr. Pike observes, "on the general ground that it spreads the burden of transport cost equally and as it can best be borne." But, then, he goes on to add that:

"It [i.e., the traditional method of railroad rate-making] obviously cannot live in company with a rival system in which charges vary broadly in relation to variations in the circumstances of cost. The result can only be the selective withdrawal by the latter of the more remunerative traffics, leaving the other with the less remunerative residue."

Need to Be Understood

Regarding truck transportation, he observes that it is carried out under circumstances where "costs would be more closely identified with the particular transaction." The result has been that "rates were influenced by factors reflecting cost, i.e., by the regularity and loading capability of the traffic, the size of the consignment and the prospects or otherwise of return loading." The transportation fraternity in Britain—as shown by the far-reaching changes recently made in Britain's regulatory law—has demonstrated a far wider and deeper understanding than has been evidenced on this side of the Atlantic of the significance of the sharp distinction between practicable railroad rate-making under monopoly conditions, and that possible under competition. Mr. Pike goes on to say:

"The statutory obligations placed upon the old-established forms of transport are intolerable in face of a major competitor not so restricted. If competition is to be the order of the day, then that competition should be on terms which are equally fair to all.

"It has been suggested in some quarters that this situation means the law of the jungle in transport. I think it means nothing of the kind. A policy of 'traffic at any price' can only spell ruin to the transport industry. There is room for both road and rail, and the proper sphere of each can be found in adherence to sound economic principles in rate-making, coupled with the efficiency of the services they respectively offer. I believe that both arms of transport will be actuated by a proper sense of responsibility both towards the transport industry as a whole and towards the customer."

He foresees that, on the railways, classification of freight will henceforth depend more upon "loading capability" (bulk in relation to weight) than upon value; the commodities that "load better" will get the more favorable rates. Where

traffic is offered under conditions favorable to the carrier, it will get better rates than equivalent traffic offered under less favorable conditions. Mr. Pike also believes more favorable rates are going to prevail "where traffic is offered in good loads and in dense volume" than where the traffic is sparse and loading not so good.

While truck charges have never been regulated in Britain—as those of common carrier trucks are here—it is evident even in this country that it is no longer the regulated carriers which set the pattern of transportation pricing. It is the contract carrier, the "exempt" carrier and the private carrier that really call the turn—to which the common carriers, either highway or rail, must accommodate themselves if they are going to thrive. This consideration does not affect common carrier trucking nearly as deeply as it does the railways—since the common carrier trucks are selective carriers anyhow; they do not have to have a large volume of all kinds of traffic in order to thrive, as the railways do.

The more the facts of the competitive transportation situation are observed and studied, the more apparent it becomes that the trend in rate policy now being pursued in Britain is probably the only one likely to protect the public in its right to the "inherent advantages" of each of the various forms of transportation. As Mr. Pike observes: "These are indeed historic changes. . . . They bring to an end a technique which has characterized railway charges for over 100 years." Surely—if tradition-conscious Britain can bring itself to a revision of a tradition when its usefulness has vanished—the transportation community on this side of the Atlantic should not find a parallel redirection of policy beyond its ability to conceive and accomplish.

A Receiving Report For Carload Freight

Most of the claims paid out by the railroads for freight loss and damage relate to carload freight. It is, therefore, a cause for particular concern that there exists no sure-fire, routine process for the investigation and reporting of the condition of carload freight upon arrival. Writes F. A. Kilker, freight claim agent of the Burlington: "Relatively few carloads of freight containing damage are now inspected by railroad representatives prior to unloading by consignee, because the unloading cannot be delayed until the railroad inspector arrives. The cause of damage and location of damaged packages in the load are not now known; consequently, neither shipper nor carrier can take effective prevention action to avoid recurring damage."

To fill this void, the Mid-West Shippers Advisory Board has approved the idea of a special unloading form. Its use will permit any consignee of carload freight to record information about the state of the load upon arrival. Data thus made available should provide the shipper and the railroads with the kind of information necessary to make their prevention efforts specific rather than general.

The idea for such a report seems to have found favor among representatives of the other advisory boards attending the recent annual meeting of the National Association of Shippers Advisory Boards at Omaha. A three-man committee of railroad officers, with Mr. Kilker as chairman, now has the job of working up the specific details of a consignee's carload damage report which will fill the needs of both the railroads and their customers. A counterpart group of shippers will shortly be appointed by the new chairman of the National Management Committee of the national association.

The preliminary report form devised by the Mid-West Board is of the "check-off" type, which makes it easy for the shipper to indicate "yes" or "no" to several dozen suggested conditions—such as "bracing loose," "bulkhead broken" and "load shifted." The questions are broken down under the headings "general description of load"; "condition of container"; "apparent cause of damage"; and "location of damage in car." Sketches for the right and left sides of the car, respectively, are provided in connection with the last-named.

Some 64 per cent of the total carload claim bill of more than $92 million reported by 119 roads for 1952 was either "unlocated damage" or "concealed damage." Only a routine inspection of all carload freight and dissemination of the findings to those who can take remedial action will make for an effective corrective program against this type of damage. The committee's intention is that the unloading report be executed in triplicate—one copy being retained by the consignee, one mailed to the shipper, and one delivered to the railroad representative when he calls to inspect damaged freight.

Such a universal unloading report for carload freight appears to be both necessary and desirable.

SAMPLES OF THE REPORTS prepared under the new system. On the outbound train report sheet blocks of cars for a single junction point are automatically grouped so the sheet can be torn and given to the junction agent as a printed delivery report.

Faster Paper Work Speeds Cars

EJ&E uses Teletype tape-to-card and card-to-tape system to reduce per diem and as a means to get more business through better service

Faster movement of cars, better records on cars, and reduced per diem are being sought by the Elgin, Joliet & Eastern by means of a new tape-to-card and card-to-tape car reporting system recently installed at Kirk Yard, Gary, Ind., Joliet, Ill., and South Chicago, Ill. Although the system has only been functioning a few months, it has materially speeded the movement of cars, and has provided the traffic department with passing records previously difficult to obtain.

This car movement reporting and recording system is actually a part of the new Kirk retarder-hump installation described in *Railway Age*, October 19, page 78. The efficient operation of this new yard required a faster, more effective method of recording and reporting car movements. The higher per diem rate also increased the incentive to seek faster movement.

An interesting feature is the "yard inventory" which can be prepared from the car tracing file. Working from the car tracing file, the cards are run through the printer every day at midnight, and a statement is prepared

showing all cars still on hand which have been in the yard over 24 hours. This statement is used to police car movements and uncover principal causes for delay.

What the Problem Was

The EJ&E's greatest density of traffic is between South Chicago and Gary, and between Gary and Joliet. To speed the operation of Kirk Yard, advance consists were needed so switching and humping plans could be formulated before train arrival. The problem was to develop a system which would produce Teletyped advance consists together with needed car records. It was also desired to have a system which could be easily meshed with existing car accounting procedures. A Teletype-tape to I.B.M. punch card system was selected as the most effective means of achieving this goal. "Bonus" advantages were realized in the form of vastly improved passing reports for the traffic department, and advance, complete arrival and delivery notices for plants receiving a large volume of traffic.

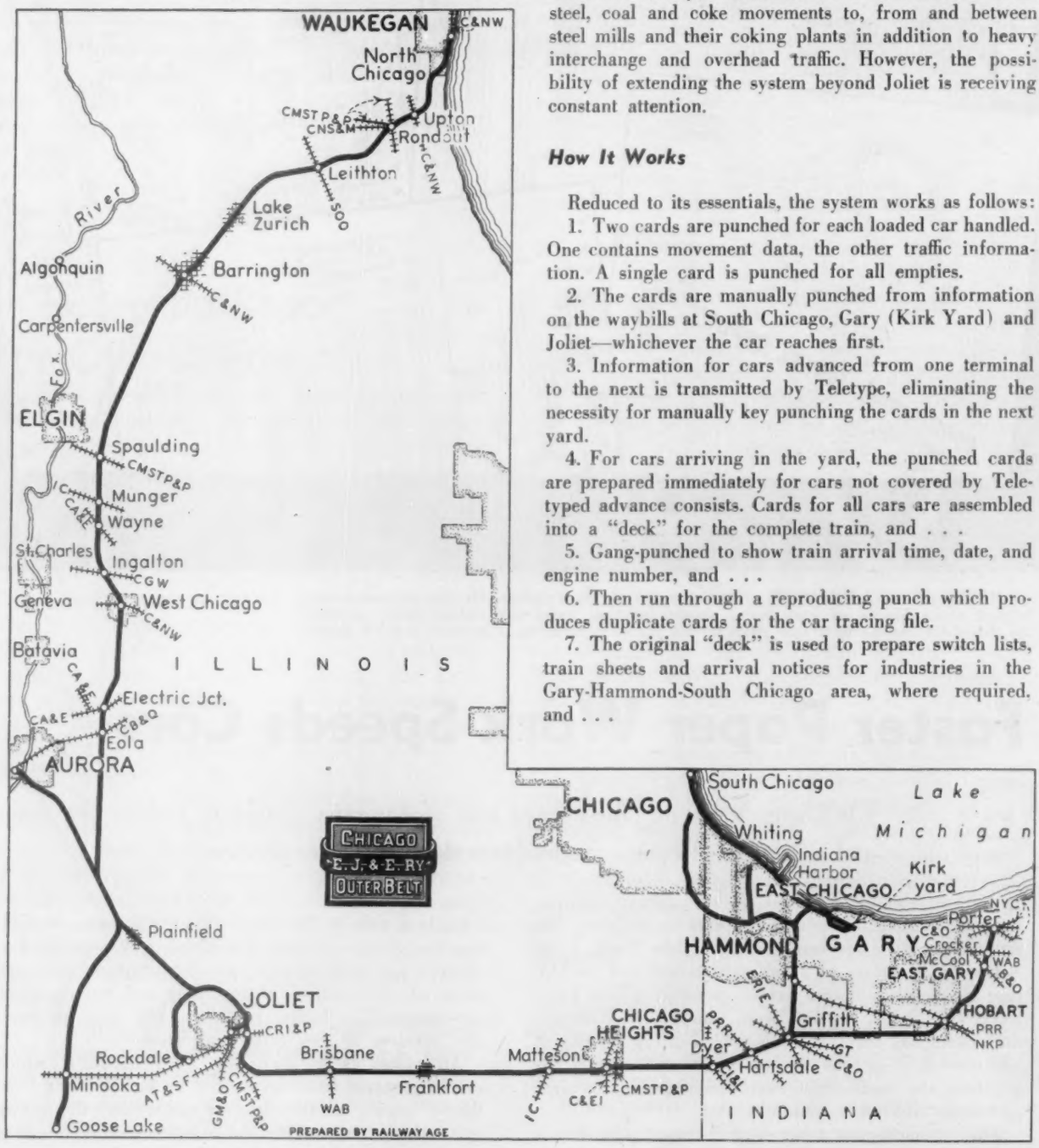
Future Expansion

Traffic density on the line west and north of Joliet to Eola, Rondout and Waukegan was not considered heavy enough to warrant a Teletype-I.B.M. installation. Consequently, the present installations are at South Chicago, Kirk Yard (Gary) and Joliet—which areas involve dense steel, coal and coke movements to, from and between steel mills and their coking plants in addition to heavy interchange and overhead traffic. However, the possibility of extending the system beyond Joliet is receiving constant attention.

How It Works

Reduced to its essentials, the system works as follows:

1. Two cards are punched for each loaded car handled. One contains movement data, the other traffic information. A single card is punched for all empties.
2. The cards are manually punched from information on the waybills at South Chicago, Gary (Kirk Yard) and Joliet—whichever the car reaches first.
3. Information for cars advanced from one terminal to the next is transmitted by Teletype, eliminating the necessity for manually key punching the cards in the next yard.
4. For cars arriving in the yard, the punched cards are prepared immediately for cars not covered by Teletyped advance consists. Cards for all cars are assembled into a "deck" for the complete train, and . . .
5. Gang-punched to show train arrival time, date, and engine number, and . . .
6. Then run through a reproducing punch which produces duplicate cards for the car tracing file.
7. The original "deck" is used to prepare switch lists, train sheets and arrival notices for industries in the Gary-Hammond-South Chicago area, where required, and . . .



8. Then broken and sorted with the two cards for each car being placed in the fold of the corresponding waybill.

9. After train has been classified, the waybills are sorted into classification track pigeon holes, following standard yard office practice.

10. When yardmaster advises outbound train is made up, it is physically checked for car order (with the checker's report forwarded to the yard office by pneumatic tube or walkie-talkie portable radios). Waybills are pulled for the made-up train, and the punch cards removed and carefully kept in train order.

11. "Deck" of cards for outbound train is then used to run the outbound train report and the conductor's wheel report. If train is destined to Kirk, Joliet or South Chicago, it is also used to Teletype the advance consist.

After a Train Departs . . .

12. After the train departs, the cards are reproduced (except for origin and shipper information). Departure time, date and engine number are gang punched into the reproduced cards.

13. Cards for each day are accumulated, sorted numerically (regardless of ownership) and used to match out corresponding cards from the car tracing files, which are then destroyed. Cards remaining in the car tracing file constitute a record of cars on hand.

14. Reproduced cards are used to prepare the agent's daily car record ("jumbo book") and then filed to await the preparation of the agent's weekly car record.

15. At the end of the week the cards are forwarded to the car accounting office in Joliet. Here they are reproduced (with some minor interpolations) and used in place of wheel move cards which formerly were manually punched from written information.

By using tape-to-card and card-to-tape Teletype transmission it has been possible to eliminate manual reproduction of cards for cars moved from one terminal to the next.

Each yard office is a self-contained unit under the direct jurisdiction of the local agent.

Accounting Department Helps

The installation and operation of the system is under the jurisdiction of the operating departments. P. T. Moran, vice-president—operations, and P. H. Verd, general superintendent, saw the need for mechanization. They asked the accounting department—with its practical background in machine accounting—for its suggestions and assistance.

Two accounting department officers, M. C. Schroeder and M. C. Schultz, spent a year formulating the EJ&E's problem, and inspecting other railroad installations throughout the country. The system as finally evolved is somewhat similar to those now in use on the New Haven (*Railway Age*, February 23, 1946, page 394, and February 18, 1950, page 356) and in Potomac Yard, Alexandria, Va.

The accounting department assisted in setting up the new system and in training employees, but it will completely withdraw at the end of the breaking-in period, leaving the operating department in sole charge.

GREATER SPEED AND ACCURACY in essential paper work result from new car reporting system. Here a conductor awaits preparation of his outbound wheel report.

DUPLICATION OF EFFORT is avoided by using tape-to-card and card-to-tape systems for transmitting and receiving data from one office to the next.

FASTER TRAIN CHECKS are made possible by two-way walkie-talkie radio. Checker's reports are recorded on Dictaphone tapes right in the Joliet yard office.

DEVELOPING ON THE CNR . . .

Systematic Employee Relations

Turnover reduced by screening applicants at employment offices—Spirit of induction crucial to future relations—A staff college in the making

To manage and control a machine is something which can be approached with confidence. On the other hand, the reactions of a human being, an employee of the railway, cannot be so accurately defined. He is, by and large, the most complex, subtle, abstract, ingenious machine ever to be encountered. What goes on in the mind of the human being is the unknown quantity which refuses to conform to specifications. Training helps to offset the human factor because it defines a course of action."

Thus spoke W. T. Wilson, assistant vice-president of the Canadian National, in addressing the recent annual meeting in Chicago of the Railway Fuel and Traveling Engineers' Association. Railroads can no longer afford a hit-and-miss method of initial recruitment, he said. The success of the railroad is measured by the sum total of coordinated individual efforts. The bad performance of a single misplaced or maladjusted employee can undo the good work of hundreds of his fellows. Faulty selection and placement practices, he said, only add up to two things—turnover and loss of business.

Uniform Employment Policy

The Canadian National has adopted a fairly uniform employment policy. There are employment offices at Quebec, Montreal, Toronto, Winnipeg, and Edmonton, with others being established at Saskatoon and Vancouver, B. C. These staff offices receive requisitions from all departments of the railway for all classes of help. They strive to have a pool of screened employees ready to be interviewed by the personnel officer in the department requiring the assistance. They do not hire anyone on their own authority. Mr. Wilson declared that progress has been made in the screening of candidates for railway employment in an effort to cut down turnover and to look not merely at the job the individual is called upon to perform at the outset, but at the potential he or she may possess for the jobs within the normal line of promotion.

"The second step in protecting our investment in our human resources," said Mr. Wilson, "involves proper induction, or introduction, of the new employee to his job and all that goes with it. This is one of the most important phases in the development of the worker. At this time he will be in a most receptive and impressionable frame of mind. This is the time then to help him form favorable attitudes and philosophies toward his work that will stand him in good stead when the going is not too smooth. The supervisor, at this stage, as a boss, can play a vital role."

The domineering type of reception to which new employees are frequently subjected can readily sour a potentially worth-while employee. The seeds of dissension and discontent thus sown, he said, may bear the fruit of poor performance in the future. Negative attitudes can infect others with whom the employee works.

Why People Get Fired or Quit

Mr. Wilson outlined results of a study of why people get fired or quit made by Dr. Moore of the Psychological Service Center, Toronto, which was published in the Financial Post of Toronto. Dr. Moore found that:

1. Nearly 17 per cent of severances arose partially through employees having interests quite opposed to those common to successful employees in a particular field.

2. Only 6 or 7 per cent failed solely because of inability to do the job.

3. Personality factors were responsible for 60 to 75 per cent of failures. The predominant factors in this group, according to frequency of occurrence, are:

	Per cent
(a) Refusal to conform and take direction	21
(b) Emotional instability	16
(c) Excessive concern with self	13
(d) Insufficient cooperation	12
(e) Inadequate initiative and persistence	11
(f) Stubborn or defiant	9
(g) Over-confident (cocky)	8
(h) Unduly self-conscious	6
(i) Home situation affecting work	4

Mr. Wilson also referred to a turnover survey recently completed by Dr. Robert D. Loken, which, like that of Dr. Moore, disclosed that 75 per cent of the people covered in his investigation quit their jobs or were fired for reasons other than ability. Both investigators agree that most of the causes are within the power of the employer to correct.

"All Men's Greatest Desire"

"If we can fix in our minds," he said, "that the greatest desire of all men is to have a purpose, a feeling of personal worthwhileness, self-respect and self-esteem, and to feel that their work is necessary, wanted and appreciated, we will have a good point of departure." Job interest, initiative, good morale or loyalty cannot be bought, he said. Inducements such as wage increases and other employee benefits are only supplementary to the basic human motive which may be summed up as a desire for recognition and peace of

mind. Employees want general knowledge about the company, its organization and its operation, about its policies, especially new ones, how they will affect themselves and their coworkers, and how their work fits into the overall picture of operations.

Supervisors hold the key to effective communication. Imparting understanding and encourgaging the development of ideas is the responsibility of every supervisor from the president on down. Presidential letters, articles in the company magazine, check stuffers, talks to company educational and recreational associations—all have a place in the communication of understanding, Mr. Wilson said, but that there is no substitute for personal contact. This allows an understanding of the ideas, comments and feelings of the other fellow by looking at it from his point of view. This is why the role of the chief clerk and foreman are vitally important.

Every employee has a right to be informed as to how he is doing, he said. The employee deserves praise when he does a good job and constructive criticism when he doesn't. Subordinates of supervisors whose principle seems to them to be "say nothing as long as things go right and raise the roof when things go wrong" are likely to develop a negative attitude toward both their jobs and the management.

Communication must flow uninterruptedly between all levels of people in the organization and not be inhibited. "Top management," Mr. Wilson asserted, "will certainly have to listen more in the future than it has in the past. Top management, in order to make acceptable decisions, will have to get the feel of lower and middle management before making those decisions. Middle and lower management for their part will also have to listen to their employees in a similar way."

Committees, group discussions, meetings, explanatory literature, social gatherings, open house, are just a few of the newer techniques which Mr. Wilson said are taking the place of the old edict as the means of communication. The Canadian National is constantly probing, surveying, and experimenting to find which of these techniques are most suitable.

The Staff College—An Experiment

Mr. Wilson described the program of a staff college set up this year by the Canadian National. The program was, to a large extent, experimental, but the course, which commenced May 31 in Montreal and finished July 17 at Bishop's University at Lennoxville, Que., is considered to have been highly successful. A group of officers with the rank of assistant superintendent of a division on up through senior supervisory ranks to general superintendents of motive power and senior operating and accounting personnel, were selected from the various departments of the railway. The tedious selection process resulted in a group of 47 men considered to have promotion potential.

A series of lectures by an officer of the railway covering the historical background of the Canadian National system started off the course at Montreal. Another officer presented the background of the St. Lawrence Seaway development. Then came the economics of transportation, including the economic characteristics of rail transportation, which was followed by a discussion on the need for cost consciousness and

SELECTING AND DEVELOPING EMPLOYEES

Selection—**The bad performance of one misplaced or mal-adjusted employee can undo the good work of hundreds of his fellows.**

Induction—**This is the time to help the new employee form favorable attitudes toward his work that will stand him in good stead when the going is rough.**

Communication—**The great desire of all men is to feel their work necessary, wanted and appreciated. Employees want to know about company policies and how their work fiits into the overall picture. Supervisors hold the key to effective communications.**

The Staff College—**Proposes to broaden the outlook of officers with promotion potential beyond the confines of their own department.**

the problems which led to establishment of a grass roots approach to the matter on the Canadian National. A lecture on the regulatory framework was presented by the vice-president and general counsel. Railway rate making, traffic and revenues were taken up by a senior officer of the traffic department, and another officer discussed passenger and express traffic problems.

The Canadian National has 187 separate and distinct agreements with 36 different labor organizations. The problems of the railway in connection with labor relations were discussed by an officer of the personnel department, and a presentation was also made on a systematic approach to selection, training, promotion and compensation of non-scheduled staff. Each of these discussions was followed by a question and answer period.

The entire facilities of the University of Western Ontario at London, Ont., were hired for a period of three weeks. During the course there modern techniques of administration were presented by Western and Harvard University professors. Wide use was made of the case method of instruction. The group then moved on to Bishop's University at Lennoxville, where the remaining three weeks were devoted almost entirely to special problems and cases within the Canadian National Railways.

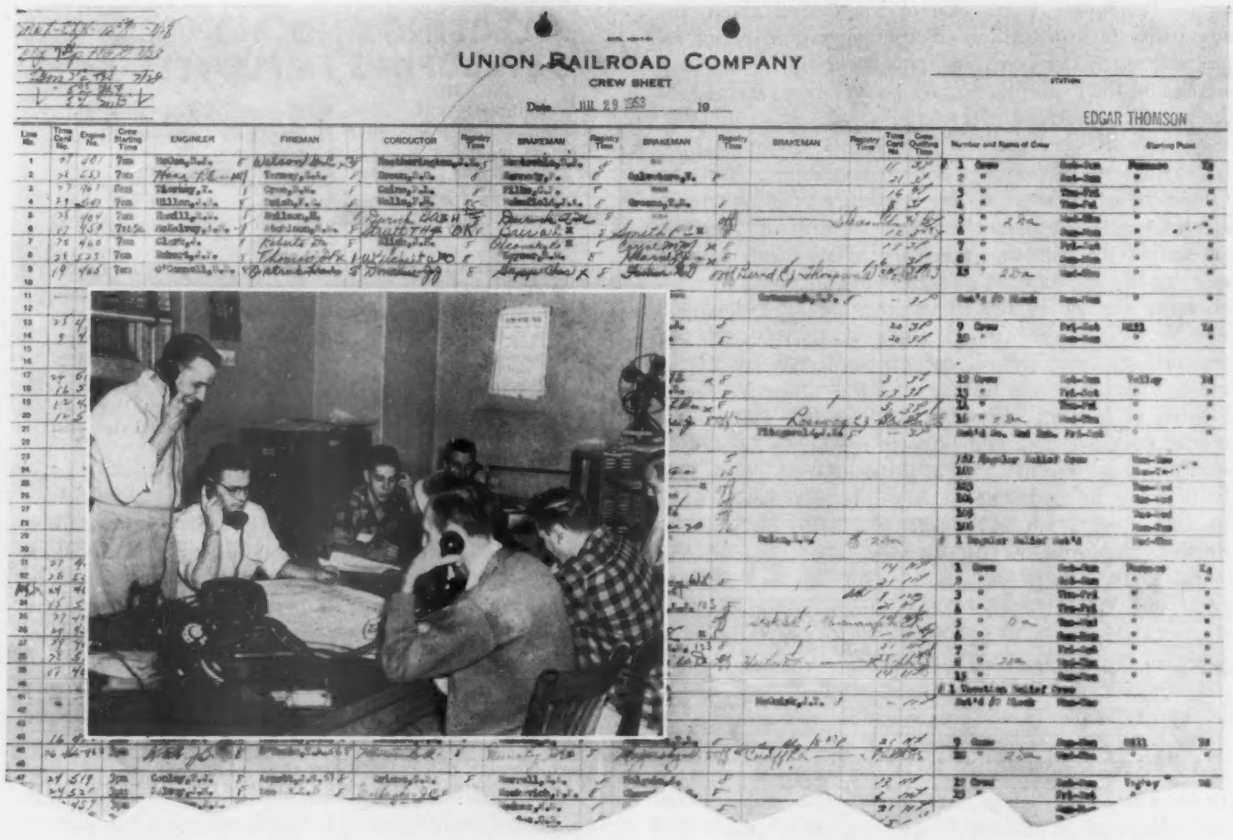
The objective of the course was to develop curiosity and to give to the man who had become a specialist in one particular phase of railway operation a broad general view of the railway organization as a whole.

From this initial experiment it is hoped there will develop a resident staff college on railway property operating continuously throughout the year. A two or three months' course is contemplated in which the broader aspects of business administration, the clinical approach to the solving of problems and the ability to separate opinion from fact in seeking the solution to a problem will be taught.

Job Evaluation and Performance Appraisal

Mr. Wilson said that a program of job evaluation, performance appraisal or merit rating and a modern plan of salary administration had been undertaken about two years ago. The non-schedule group of employees now know the minimum or starting rate, the standard

(*Continued on page 97*)



OLD CREW BOARD frequently was almost illegible. Inset shows clerks in crew dispatcher's office at East Pittsburgh juggling names and 18 in. by 29 in. crew sheets.

NEW CREW BOARD made by Teletype from punched cards is highly legible. (Above) job and man cards are easily seen in this rack, where different colored cards make unlikely any high percentage of "muffing" in filling assignments.

E T DIV SEP 29 53 FIRST TURN

TRAIN CREWS ETC

1 CREW BESS FCE YD 7 AM 29 ET 1 15 OFF SAT SUN 101 REL 18
D J WENTROBLE 09128 CON
J K MURPHY 06568 BRK

2 CREW BESS FCE YD 7 AM 29 ET 2 15 OFF SAT SUN 102 REL 28
S G BROWN 09114 CON
V SALVATORE 09218 BRK
P KENNEDY 09201 BRK

3 CREW BESS FCE YD 8 AM 29 ET 1 15 OFF THU FRI 101 REL 18
P L CAINE 09116 CON
A J COULTER 06775 BRK

4 CREW BESS FCE YD 7 AM 29 ET 2 15 OFF THU FRI 102 REL 28
G P FILKO 06605 CON
C J ROSSWOG 09195 BRK
R JOHNSON 06482 BRK

5 CREW BESS FCE YD 7 AM 29 ET 1 15 OFF WED THU 101 104 REL 18
M W PATTERSON 09144 CON
H L SLEASMAN 09269 BRK

6 CREW ANNULLED 29
CON
BRK
BRK

7 CREW BESS FCE YD 7 AM 29 ET 1 15 OFF FRI SAT 105 REL 28
J E ELISH 09192 CON
W A BRUCE 06270 BRK
T H STRUTT 09027 BRK

8 CREW BESS FCE YD 7 AM 29 ET 1 15 OFF SUN MON 105 REL 28
C R TOLAN 09152 CON
W O WIECHELT 09454 BRK
P A GEORGE 06577 BRK

19 CREW BESS FCE YD 7 AM 29 ET 1 15 OFF WED THU 102 105 REL 28
J M WAGNER 09251 CON
M G BEDNAR 06295 BRK
D REBICH 06495 BRK

SWTCH TDR NO 2 BLOCK 7 AM 29 ET 15 OFF SUN MON NO 1 REL ST
E P CAVANAUGH 09252 SW

9 CREW BESS MILL YD 7 AM 29 ET 1 15 OFF FRI SAT 104 REL 28
F C KITCHEN 09202 CON
R J DICKSON 09196 BRK
M L OBRIEN 09160 BRK

10 CREW BESS MILL YD 7 AM 29 ET 1 15 OFF SUN MON 104 REL 28
L J EARLEY 09122 CON
P DOYLE 09121 BRK
J J COYLE 09157 BRK

12 CREW BESS WLY YD 7 AM 29 ET 2 15 OFF SAT SUN 106 REL 28
W HERD JR 09262 CON
C LEONARD 09204 BRK
P K WADSWORTH 09176 BRK

HOW MODERN MACHINES HELP AS . . .

Union Assigns 330 Crews Daily

Teletype and punched cards simplify placing men in crews, reporting at 21 points—Payroll integrated with dispatching system

Punched cards and Teletype are enabling the Union (Pittsburgh) to transmit quickly and accurately to 21 crew reporting points all the data necessary for assigning men to 330 or more engine and train crews operated by this large switching and terminal carrier each day. A few of the more important advantages of this system over the one formerly used are: clerical time in dispatching has been reduced; assignment boards are clean, legible, machine-written records; most of the chances for human error inherent in transcription, etc., under the old system have been eliminated; delay in transmitting assignments has been eliminated; and payroll for the crews has been fully integrated with the dispatching set-up.

As explained by Glenn A. Squibb, transportation assistant of the Union, at the November 4 meeting in Chicago of the Railway Systems and Procedures Association, up until a few months ago, at the central crew dispatching office 26 clerks each 24 hours struggled with 24 large sheets of paper carrying crew assignments for two days at each of the 21 crew starting points.

Furthermore, at three of the larger starting points there were clerks who did nothing but copy boards, from telephone orders given by the central crew dispatching office, and actually call the crew men once the assignments were made by the crew dispatching office at East Pittsburgh. If the yard employees could not reach the men assigned, East Pittsburgh had to be called for a new assignee to the vacant job. This large volume of telephoning (34 man-hours per day spent alone in telephoning and copying boards) connected with the handling of two days' boards, frequently meant that a man was "lost" because the clerk erased his name in one place and forgot to copy it in another place when he picked up a phone to take another call. Naturally, due to frequent erasures, ets., crew boards often were almost illegible.

One Card per Man

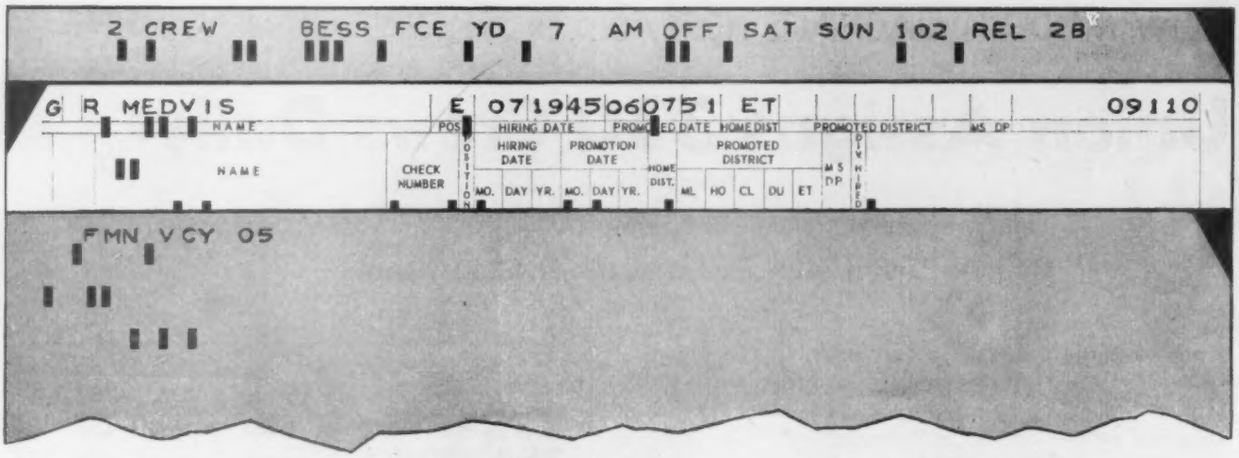
Under the new set-up most of these difficulties have been eliminated. There is a punched card for each engine and train crew and for each man regularly assigned to that crew. The card for the crew shows crew number, starting time, starting point, regularly scheduled days off, division on which the crew operates, the weight-on-driver's code for the locomotive regularly assigned, and the code for the class of service on the crew. All cards are kept in racks similar to that illustrated.

INHERENT ADVANTAGES OF THE NEW SYSTEM:

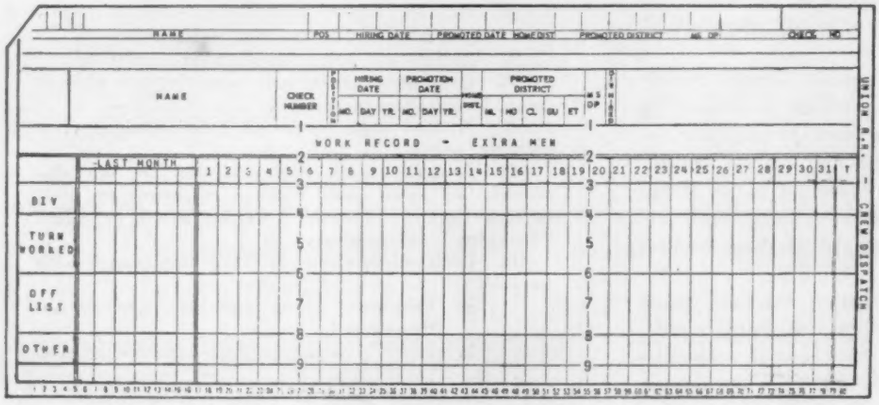
1. Handwritten assignment records are eliminated entirely.
2. Better tools are provided for properly assigning men.
3. Train and engine crew members receive complete assignment information.
4. Crew assignment boards are clean, legible, machine-written records.
5. Human error is impossible beyond the phase of card-handling in the racks.
6. Telephonic relay of data is eliminated.
7. Data are transmitted correctly and without delay by mechanical means.
8. Manual transcription is eliminated at crew starting points.
9. Seniority data are available to the dispatcher on man cards without reference to files, in the case of vacancies to be filled or when "bumping" takes place.
10. Crew dispatching is fully integrated with payroll:
- **a. Employee check numbers are pre-authenticated.**
- **b. Payroll data are predetermined and prewritten.**
- **c. Crew class of work predetermined on a normal basis.**
- **d. Engine weight on drivers predetermined on normal basis.**
- **e. Normals are group treated and exceptions treated as such.**

11. Future refinements are possible:
a. Seniority rosters of train and engine service employees may be printed mechanically from data punched into man cards.
b. Advertisements of vacant positions and awards of these positions may be printed and broadcast mechanically from cards.

Under normal circumstances, immediately below the crew card in the racks is the card for the conductor (in the case of train crews) and behind that the conductor's job card. When a job card shows up instead of a man card that means there is a vacancy to be filled. Below the conductor's job card is the man card for the brakeman regularly assigned to the crew, then his job card, and so on. All man cards are white but job cards for conductors, brakemen, etc., are of different colors so that when a green card, for instance, shows up the crew clerk knows he has a



CARDS from top to bottom are in the order they'd be in the racks; crew card; job card, left corner of which is sticking out behind man card. Card at bottom is for a fireman vacancy, shown here only for illustrative purposes. Where the whole job card of a train crew member shows, that indicates a vacancy, while engine crew vacancy cards are placed in the first rack in front of the job card in the racks when an engineer or fireman is off, so that vacancies may be filled from the extra list in the order in which they occur.



THE MAN CARD is laid out to provide pay roll information for the accounting department. In the proper date column the employee merely fills in time worked.

conductor's job to fill. Engine and train crews are kept on different boards so that one clerk can deal exclusively with men coming under one union agreement.

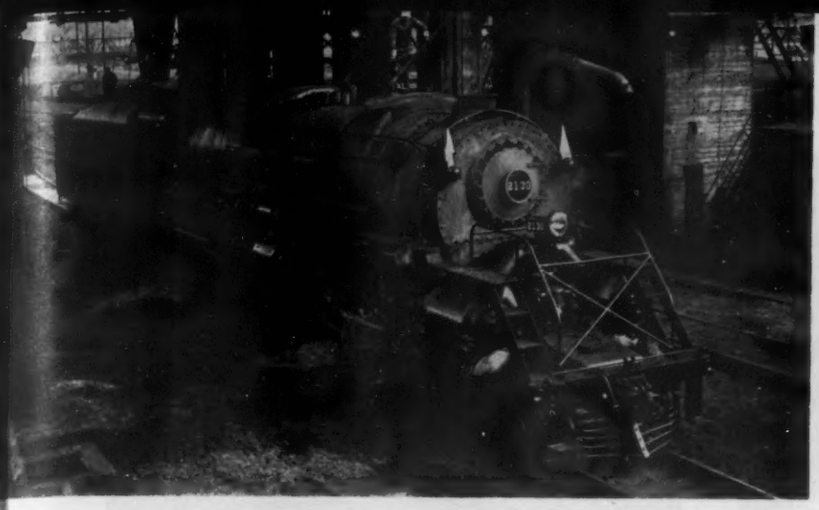
Payroll Integrated

After all vacancies have been filled and there is a man for each job, the cards (crew, job and man) are stripped from the racks and run through an International Business Machine 063 card-to-tape punch. The tape produced by this machine is fed into a Teletype transmitter which "broadcasts" the board to all starting points for posting.

A copy of the crew board is compared with the time returns when received from the crew members, and exceptions to regular days of work are annotated on the crew board. Then the board and the men's time returns are forwarded to the payroll section of the accounting department. A duplicate deck of punched cards is produced from the cards which were fed through the 063 machine, and these become the payroll cards. The accounting department has to punch into the cards only the time worked by the man, and his earnings.

In addition to the two crew boards transmitted on each trick, the standing of the extra list also is transmitted three times a day to all starting points. This has proved a great help to extra men in figuring when they work next and has cut down appreciably on the number of telephone inquiries coming in from these men.

The installation does not yet involve all crew starting points but when finished the Union will have three Teletype printers, five transmitters and two 063 punches at East Pittsburgh, plus Teletype receivers and transmitters at the crew starting points. Eventually the Union expects to utilize this Teletype network to transmit a large volume of reports and other forms now being telephoned, since sending the crew boards will occupy only about 25 per cent of available machine time.



WHERE STEAM IS NOT THROUGH YET . . .

Facility with a storage capacity of 2,000 tons services locomotives with coal, water and sand in 9 minutes or less in one spotting

. . . New Coaling Station for N&W

Although dieselization has displaced steam power from the center of the railroad stage, the steam locomotive is still important, and those roads that are continuing to use it on a large scale are not overlooking the need for improvements in servicing facilities.

A case in point is the $2-million project now under construction on the Norfolk & Western at Bluefield, W. Va., for providing new engine-terminal facilities for steam locomotives, which are expected to shorten the turnaround time of each locomotive by some 40 min. Included in this project is a modern coaling station which delivers coal, sand and water with one spotting of a locomotive in almost the same time that it takes an automobile to be checked and serviced at a filling station. Four locomotives can be spotted and serviced at this station at one time. Erected at a cost of $440,000, the

1 SKIP BUCKET (one of four) trips release gate of unloading hopper, is filled with coal, and carries and dumps it at top of station. Coal then passes over a . . .

2 MAGNETIC SEPARATOR which removes all metallic objects that may have gotten into the fuel. Coal may be crushed or by-pass the crusher to go to a . . .

3 SCREEN where the locomotive coal is separated from the slack before coal goes into a storage bin for locomotive coal.

4 CHUTE CARRIES SLACK to a separate bin. This slack is used in stationary boilers at various points on the railroad.

HOISTING MECHANISM (one of two) which raises skip buckets to top of station. Bin indicator lights are on wall at left.

OIL HEATERS were built into the station's service track for thawing coal in cars to facilitate unloading during cold weather.

reinforced concrete coaling station can store 2,000 tons of coal for locomotive use; 150 tons of slack coal for stationary boiler use; 50 tons of dry, screened locomotive sand; and 150 tons of wet sand which is dried and screened at this plant.

The storage capacity in itself is believed to make this station the largest railroad facility of its kind in existence, and the N&W is convinced that it is "the most complete railroad coaling station of its size in the world."

Built in Dual Units

The station was built with dual units, each functioning independently. Stoker coal is delivered to the station in hopper cars which are spotted on a service track on the south side of the structure. This track was constructed with a one-per cent grade, descending toward the station, which causes cars to move by gravity over an underground hopper where the car brakes are set and the load dumped. Four 1½-ton skip buckets—two in each unit—operate in guide tracks that run from a pit beneath the hopper to the top of the station. The four skips will hoist 200 tons an hour.

The two buckets in each unit operate so that an empty is returning to the hopper while a full bucket is being raised for dumping into the top of the station. As each bucket passes beneath the hopper it trips a release gate and is filled with coal. Each pair of buckets is counterbalanced so that only the weight of the coal is lifted. Power for the lifts is supplied from two control houses, each containing a 15-30-hp. electric motor and a two-speed hoisting winch.

One ¾-in. cable is used for two buckets, with a bucket attached to each end of the cable, which is wound by a reversible winch. As the bucket is filled, the winch reverses to lift it to the top of the station, simultaneously lowering an empty bucket beneath the hopper.

After this operation is started, it is fully automatic. In each control house is a panel of lights which flash to indicate the mechanism in operation and when the bins are full. When a "full-bin" indicator lights up, either unit stops automatically while the other unit remains in operation until the bin it is supplying is full. Hence, the bins cannot be overfilled.

As the coal is dumped from the buckets at the top of the structure it moves automatically over a reciprocating feeder onto a magnetic separator which removes any metal, such as nails, spikes, nuts, etc., which may have gotten into the fuel. The coal may then take one of four routes: It can go directly to a stoker-coal main storage bin; if it contains oversize lumps it may be fed into a crusher which reduces it more to the desired size, thence going to a small-mesh screen for the removal of slack; it can by-pass the crusher and go directly to the screen; or it can go through the crusher directly into a slack bin. All of these operations are dual processes conducted simultaneously.

When enough slack has accumulated in the bin, it is loaded into a car just emptied and taken away for use in stationary boilers. About 15 per cent of the coal received at this plant gets into the slack bins. The screens can be changed as to the mesh size to match the need of the stationary boilers on this road.

Sand is brought into the station in the same manner as the coal, but the mechanism is so interlocked that the sand cannot be placed in the coal bins when the control is set for elevating sand. Since sand weighs about 2½ times as much as coal, a manually controlled gate on the loader limits the amount of sand loaded into the bucket. At the top of the station the sand is discharged into a 75-ton sand bin of one of the units. From there it feeds by gravity into steam sand dryers.

From the dryers the sand descends through a screen and into a 25-ton dry-sand bin beneath. From there it can be dispensed through sand spouts directly into the locomotives.

Water is pumped from a river at the town of Bluefield, Va., three miles distant. It is treated at the plant in Bluefield, W. Va., and flows into two 400,000-gal. storage tanks. From these tanks the water flows to four standpipes located two at each end of the coaling station.

When a locomotive enters the station from either the east or west on any of its four tracks, it can be serviced completely at one spotting. Spotting points are painted along the side of the station to permit proper spotting of each class of locomotive serviced. At the old coaling station it was necessary to move the locomotive forward or backward for trimming the load while the engine was being coaled. At the new station, its eight chutes are moved as they discharge their coal, thus trimming the load as it is dumped. These movements are controlled manually from a high platform by coaling-station employees.

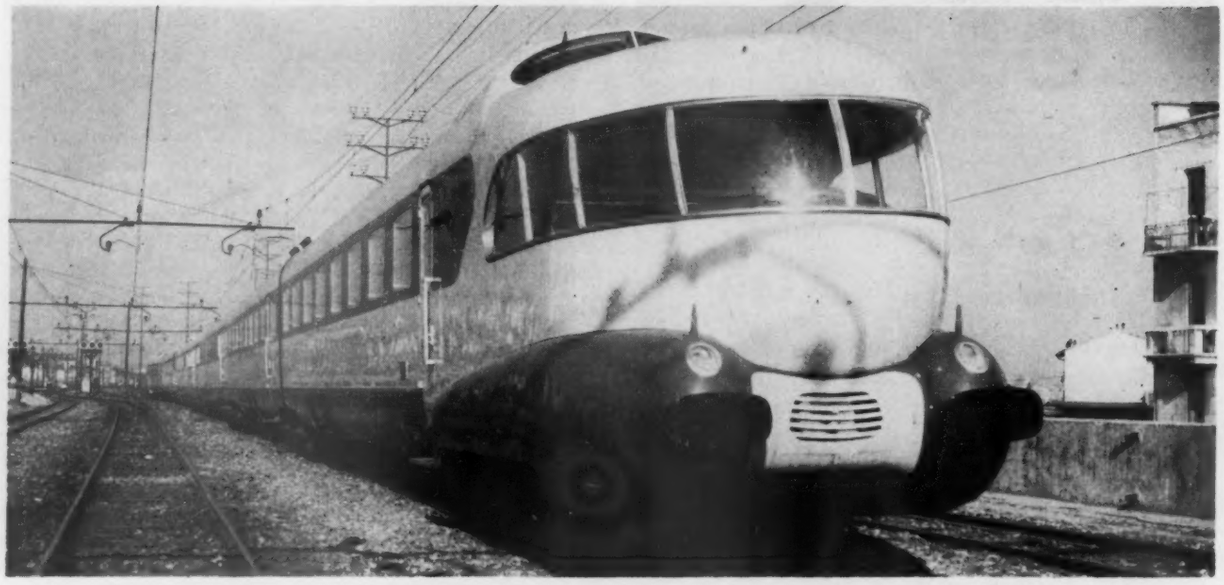
Servicing in Only 8 Minutes

With the engine in the same spot, the sand spouts are lowered and opened, allowing the sand to flow into the sand boxes. The standpipe beside the track also is swung into position over the tender to replenish its water supply. The entire servicing operation consumes only about 8 or 9 min., as compared with the 20 to 25 min. required before the construction of the new station.

It was necessary to furnish coal to the old station continuously on a constant 24-hr. supply schedule, but the huge capacity of the new structure is expected eventually to make it possible to operate the skip hoists only five 8-hr. days per week.

For thawing frozen coal in cold weather a series of oil heaters has been built into the track serving the coaling station. These heaters thaw the coal in the bottoms of the cars, facilitating dumping into the supply hopper. A car shaker on a hoist over the unloading hopper facilitates unloading cars into the hopper.

In connection with the engine-terminal improvements, a modern engine service building is being constructed in which the largest modern steam power can be completely lubricated in from 10 to 12 min., with the connections on the locomotive and the lubricating lines so arranged that the wrong lubricant cannot be put in any lubricant container or opening.



On Italian Railways Series 300 . . .

The Passengers Can Look Ahead

Two multiple-unit electric trains with observation compartments at both the front and rear ends have recently been placed in daylight service by the Italian State Railways on the electrified line between Naples and Milan. The trains operate on a fast schedule of 8 hr. 50 min. for the 568-mile run, with intermediate stops at Rome, Florence, and Bologna. They are for first-class passengers only and an extra fare is charged.

The train, built by Societa Italiana Ernesto Breda at Milan, consists of seven coach units and accommodates 160 passengers. Each of the two units at each end of the train has ten passenger compartments opening from a side corridor. The three middle units comprise the dining car, the kitchen car, and a baggage car. Each end unit is provided with an operator's compartment, separately entered, which is immediately back of and above the observation compartment.

The two units at each end of the train and the three middle units are articulated. The train thus consists of three vehicles and is carried on ten four-wheel trucks.

The compartments in the passenger-carrying units are unusually large. Each is arranged with sofas seating three persons each against the bulkheads, with four loose chairs in the middle which can be arranged as desired by the occupants. The observation compartment in each of the end units accommodates eleven passengers, five in a built-in seat against the bulkhead and around the side of the car and six in swivel chairs. These are non-revenue seats and are available for the occupants of the compartments. There are toilet and lavatory facilities at both ends of the inner body unit at each end of the train.

The dining car has seats for 56 persons. It includes a bar, which is separated by decorated partitions from the dining room, and is equipped for serving ice cream, coffee and other beverages. The dining room has 14 tables for four passengers each. The kitchen in the adjoining unit is equipped for all-electric cooking. Next to the kitchen in this unit is a storeroom, a compartment for personnel, with a lavatory and shower bath, and a small postal compartment. In the baggage unit is space for heavy luggage, shelves for suitcases and wraps, a newstand, a radio and telephone compartment, and a small compartment for personnel.

The line on which these trains operate is electrified with 3,000-volt d.c. power. For lighting and air-conditioning equipment 220-volt, 60-cycle motor alternators under the baggage car supply three-phase current through two train-line circuits to the other cars. This power is used at the kitchen and bar. It operates the air conditioning in the four compartment units and the dining car, and supplies power for the fluorescent and incandescent lighting throughout the train.

The propulsion equipment consists of twelve motors, two in each of six trucks. Each motor develops 265 hp. at the hourly rating and 200 hp. continuous rating.

The trains are equipped for radio reception of programs transmitted by the Italian Broadcasting Company. Announcements and news are transmitted through a microphone placed in the radio compartment. There is telephone communication between the two driving compartments and the radio compartment.

THE OPERATOR'S COMPARTMENT is raised above the roof of the car.

FACTS ABOUT THE ITALIAN M-U ELECTRIC TRAINS

Total length, ft.-in.	541-4
Width over insides, ft.-in.	9-2
Height over operator's cab. ft-in.	14-1
Total weight, lb.	714,000
Number of motors	12
Continuous rating each, hp.	200
Maximum speed, m. p. h.	112

EMPLOYEE RELATIONS

(*Continued from page 89*)

or job rate, and the maximum rate for the position they occupy. The merit rating or performance appraisal is conducted on an annual basis and is now in use on about one third of these positions on the system. The performance appraisal calls for a frank discussion, after the appraisal is made, between the employee's immediate supervisor and himself. It gives the supervisor an opportunity to point up those areas in which a man might improve his performance and improve himself and thereby his status in the company.

The Canadian National also has an active labor-management cooperative movement and an extremely active suggestion system, he said.

"I have merely scratched the surface of the many things that can, should, and will be done in improving personnel administration generally," Mr. Wilson concluded. "We are determined to make progress on the Canadian National and, in making it, are grateful to the large railroads, and some of the small ones too, in the United States who have given us freely of their advice as a result of the experiences they have had in developing personnel programs along similar lines."

ENTIRE SHOP PERSONNEL on the Great Northern at Hillyard, Wash., is gathered here to be instructed in use of fire extinguishers.

HOW TO TRAIN PERSONNEL FOR . . .

Firefighting on Rail Property

Systematic programs of instruction are recommended, preferably involving the actual use of equipment in extinguishing simulated fires

By W. S. WICKER
Chief Engineer
Transportation Mutual Insurance Company
Philadelphia

The general education of employees in fire-prevention activities is receiving more and more attention and various methods have been developed and are used by the fire-prevention departments of the railroads. Supervision and other personnel should, above all, be made thoroughly acquainted with the fire-protection equipment they may be required to use. It is necessary for this purpose to plan an extensive program involving the actual extinguishment of simulated fires of various types and intensities by the men who will be called on to protect the equipment or property in case fire occurs. Even the best of fire equipment is less effective in the hands of inexperienced men.

Visual education by means of posters and bulletins has been instituted by most railroads, particularly by use of the posters issued by the Association of American Railroads, the National Fire Protection Association and the underwriters. Publicity is also secured through posters dealing with specific hazards. A number of railroads issue monthly fire-prevention bulletins giving not only a "pep talk" based on the causes of fires occurring during the month but also a list of locations of the fires with types of properties involved and estimated losses.

Fire-prevention meetings are held on some railroads as frequently as once a month. Such meetings provide a forum for discussion of fire hazards and causes and the exchange of ideas about prevention and protection. It is necessary and desirable that supervisors discuss the results of such meetings with the employees under their jurisdiction. Special committees or groups at many shops, stations and terminals have created increased interest and secured better attention to fire prevention and protection in their respective territories. Positive results achieved in many sections by the efforts of these groups have been the subject of favorable comment.

One large railroad has converted an old baggage car into a complete fire instruction and demonstration car. This is sent to division points and other locations where demonstrations are given to instruct employees in the proper use of the several types of fire-protection equipment maintained on the system. This car is equipped with every type of extinguishing unit used on the railroad and includes, in addition to hand extinguishers, a large water tank, a motor-driven fire pump for supplying 1½-in. hose combining solid stream and fog-type nozzles, and a proportioning tank for a premixed foam solution.

Training of Personnel

The training of personnel is usually done by arranging simulated fires of varying sizes at safe distances from fixed properties and rolling equipment and showing employees which extinguishers are adapted to the different types of fires and how to use them effectively. Since it is advisable for employees actually to use some of the units in order to act with confidence when necessary, the fires are then relighted in sequence and interested em-

MR. WICKER is the author of a series of five articles dealing with various phases of fire protection at diesel facilities, which have been appearing in *Railway Track and Structures*, a Simmons-Boardman publication. The final installment, discussing the training of personnel, will be published in the December issue of that paper. Because this article has so much in it of interest to the personnel of various departments, as well as to railroad management, it is published here. Although the suggestions for assuring effective action by employees in the event of fire apply particularly where diesel facilities are involved, they may be used as a guide to fire-protection training in a more general sense.

ployees are invited to use the extinguishers. As a rule most of the employees are eager to try the extinguishers and thereby learn the various capabilities and limitations of each type.

Preparation of additional aids to fire prevention thinking, such as movies and slide films, is in the planning stage. While constant search is being made for better and more scientific methods of fire control it is still necessary at this time to continue to rely largely on personal demonstrations for railroad fire-prevention training.

Fire Extinguishers on Diesels

Considerable progress has been made in equipping diesel locomotives with adequate fire-prevention devices of sufficient volume to extinguish any fire without assistance from municipal or other sources. The provision of this protection is highly desirable, for all too often such fires occur where no outside help is available. It is necessary to properly instruct and thoroughly train engine crews and others who may have to use the appliances on a diesel locomotive during an actual fire to give them an opportunity for thorough tests so they may act intelligently during an emergency. To substitute untrained men for the regular trained crew could have serious results should fires occur during hours of service.

In fire-prevention work an important detail is prompt advice when fires occur. This is not merely for the record but to permit early investigation before any evidence is removed. Determination of the cause of a fire may depend on some factor that may be overlooked by untrained employees. Through a study of the causes real fire prevention is promoted by making it possible to remove conditions that previous investigations have proved to be hazardous. Incidentally, a small fire may reveal more important facts for use in fire prevention education than one of greater size with no unusual features or with all possible evidence as to the cause destroyed.

The careful training of employees in supervisory capacities assures full cooperation in the prompt reporting of all fires, regardless of magnitude. To emphasize the necessity of promptly reporting fires some railroads print these words on the covers of insurance schedules: "In case of fire or lightning damage, wire immediately to the insurance department."

Why Fire Brigades Are Desirable

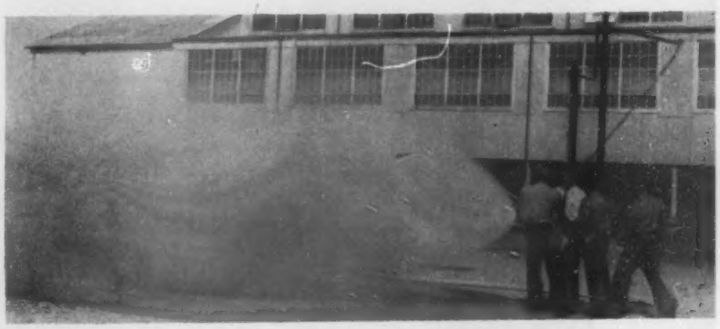
Fire brigades are necessary at railroad shops even when municipal departments are available. In case of fire, however, the city departments should be called immediately, regardless of whether a local brigade is maintained. Some of the reasons for maintaining well-trained shop fire brigades are:

(1) Plant forces can frequently extinguish a fire before the city department arrives and thus reduce the severity of the loss;

(2) The city department may be on another call. This is particularly true in cases where an adjacent conflagration has exposed railroad property;

(3) In many railroad shop plants the city firemen are not always familiar with local conditions and hazards, the fire protection layout and the water supply;

DEMONSTRATION of how a 30-lb. dry-chemical extinguisher is used to put out an oil fire. Man is wearing a special gas mask and had just passed through a smoke-filled building to simulate a tunnel fire.



HOW A FOG NOZZLE is used is demonstrated in this view. This is a 2½-in. combination nozzle.

SHOP FIRE BRIGADE showing how burning spilled gasoline can be extinguished with water fog.

EMPLOYEES being trained in the use of carbon dioxide extinguishers for putting out gasoline and oil fires.

EQUIPMENT from demonstration car of the Great Northern is being used here to put out an oil fire while employees look on.

(4) Railroad shops are usually on the outskirts of cities or towns and frequently outside the corporate limits;

(5) Smaller communities have limited manpower for fire brigades.

In some large plants motorized paid fire departments are maintained. Other shop plants maintain fire brigades consisting of the chief, an assistant chief and as many members as are necessary to man the equipment. Adequate training is essential and periodic drills are desirable, at which the men are given an opportunity actually to handle the equipment. To be effective the training of brigades must include monthly briefings on fire hazards, instructions on how to make regular inspections, and making arrangements for shutting off electric power in buildings in case of fire.

Regular inspections by the shop fire chief assure a thorough familiarity with the property. Such inspections facilitate the formulation of plans to be followed in case of fire.

When instructing employees in the proper methods of fire fighting, emphasis is placed on the importance of using proper equipment. Care is also taken to see that every employee knows the locations of fire alarm boxes or telephones for calling assistance if fire is discovered.

Selecting Men for Brigades

The men on shop fire brigades are preferably selected from different parts of the plant so that some one on the brigade is familiar with conditions in the place where a fire may occur. It is desirable to select men young and active enough to handle the equipment rapidly and effectively and those who can leave the job without materially interfering with shop operations. Some railroads provide an incentive to serving on fire brigades by furnishing annual passes to members of the brigades and their families.

This has the double advantage of holding the interest of the younger and more active men and avoiding complaints from older employees whose years of service already entitle them to the pass privilege but whose seniority would possibly make them also feel entitled to any additional monetary recompense that may be given for membership on the fire brigade.

Brigades require adequate training, starting with short periods of discussion on various fire-prevention subjects. Usually only one or two subjects are discussed at each meeting. Frequently the discussion period, which is preferably attended by foremen and supervisors, is held immediately following fire drills.

When starting to train the members of a fire brigade there are three things for the men to remember. These are:

(1) Use your head and do not get excited;

(2) Know what you are doing and the reason for it; and

(3) Do not worry about possible criticism after you have done your best in fighting a fire.

The ensuing steps in training fire brigades include explanation of the construction, operation and effect on fires of various types of portable equipment, the limitations of each type and how long it will operate, and the types suitable for Class "A," "B" or "C" fires. The use of extinguishers is then emphasized by having different employees operate the several types on actual fires to learn the proper methods of approaching the fire and applying the extinguishing agent. Next should come a study of fire hose nozzles of different types and of all other equipment.

After thorough explanation of how and when to use straight streams, water-fog or foam, the regular drills are in order. The drills are usually started by laying hose lines inside and outside buildings and to roofs. After several trials with hose layouts a study of the handling of accessory equipment is desirable, such as the use of foam generators, pick-up foam nozzles, attaching and removing sections of hose and similar activities.

The operation of each new appliance or method should be learned thoroughly before starting on the next so that eventually the use of all equipment will become entirely familiar to brigade members. They should be required to drain and dry hose and return all equipment to its proper place in good working order after each drill. Reports are necessary showing the number of men and the equipment used at drills.

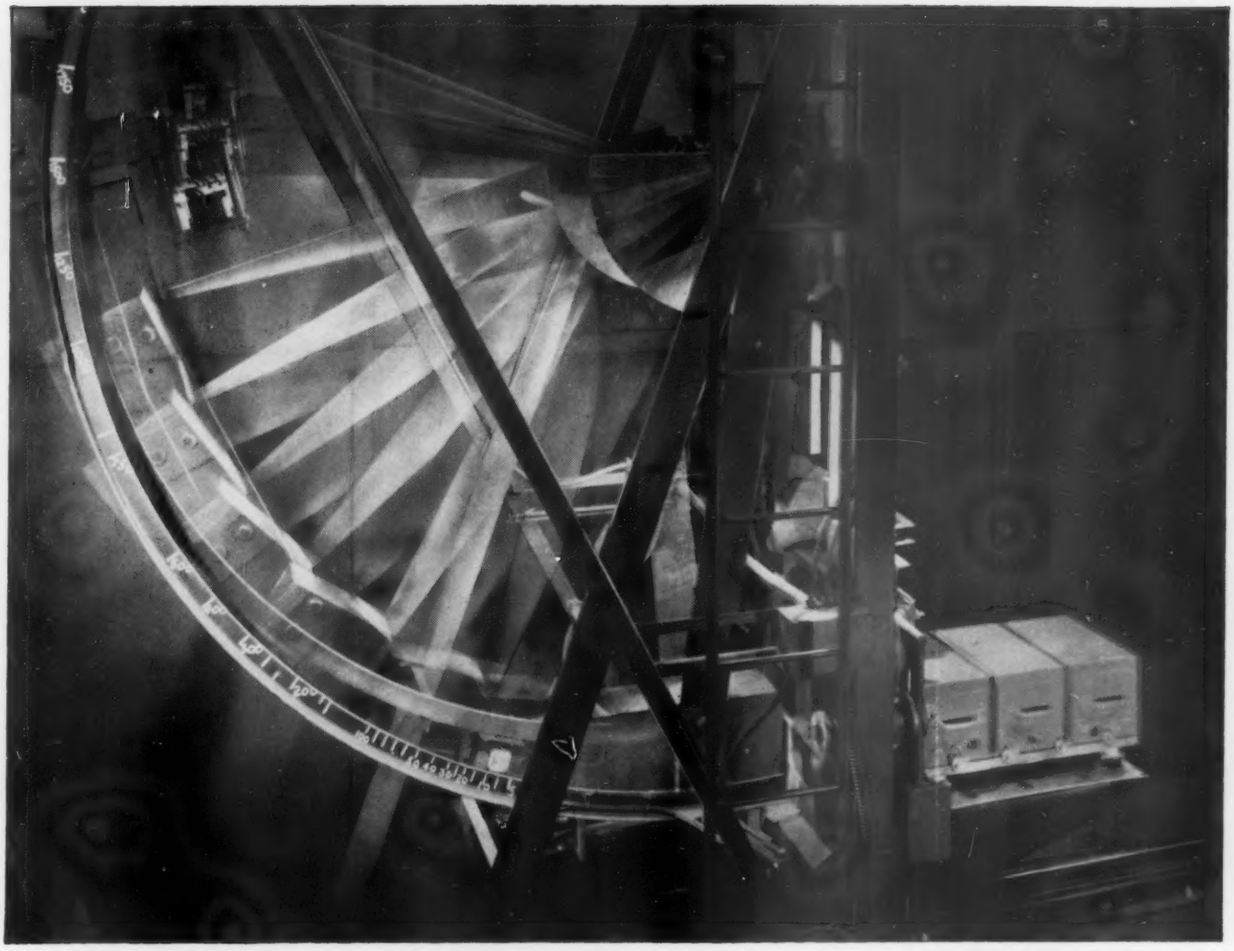
Role of Night Watchmen

The training of night watchmen and patrolmen in the use of fire-protection equipment is particularly necessary. The watchmen should know where the fire-alarm boxes are located and how to use them. They should be thoroughly instructed in the use of the different types of first-aid fire-protection equipment so that they may do everything possible to extinguish or control the fire before outside help arrives. The importance of first calling for outside assistance when a fire is discovered should be especially emphasized. The plant watchmen can do little more than call for help when a fire is discovered, but the promptness with which such help is secured largely governs the severity of a loss.

No two fires are exactly alike. Each fire involves combustible materials and has characteristics which may or may not be present in other fires in similar properties. There are, however, certain features of the elements of combustion that are common to many fires, and knowledge of these should be invaluable to those interested in prevention and extinguishment. Each type of fire requires suitable equipment and methods of extinguishment which it is necessary to emphasize in any comprehensive training program.

It is inconceivable that general fire-prevention supervisors can reach all employees who, through forethought and prior action could prevent most fires from starting. Just a few words, however, from foremen and supervisors from time to time about the fire possibilities of a particular job will emphasize the hazards and direct attention to the probability of preventing serious fire losses. Such day-by-day instruction will supplement any overall fire-prevention educational activity that may be instituted.

If it is to be successful, fire-prevention education, because of frequent changes in personnel, should be an extensive and continuing program. The time and expense devoted to such efforts will be more than repaid by the resulting preservation of property and the avoidance of interruptions in operations due to serious fires.



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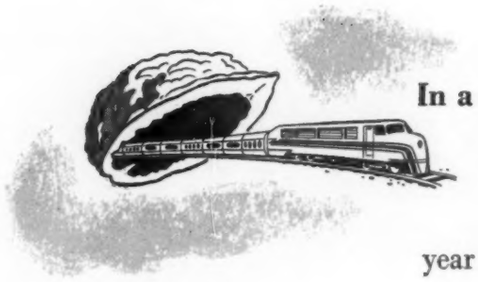
J-02269

What's happened to

OPERATION TALGO?



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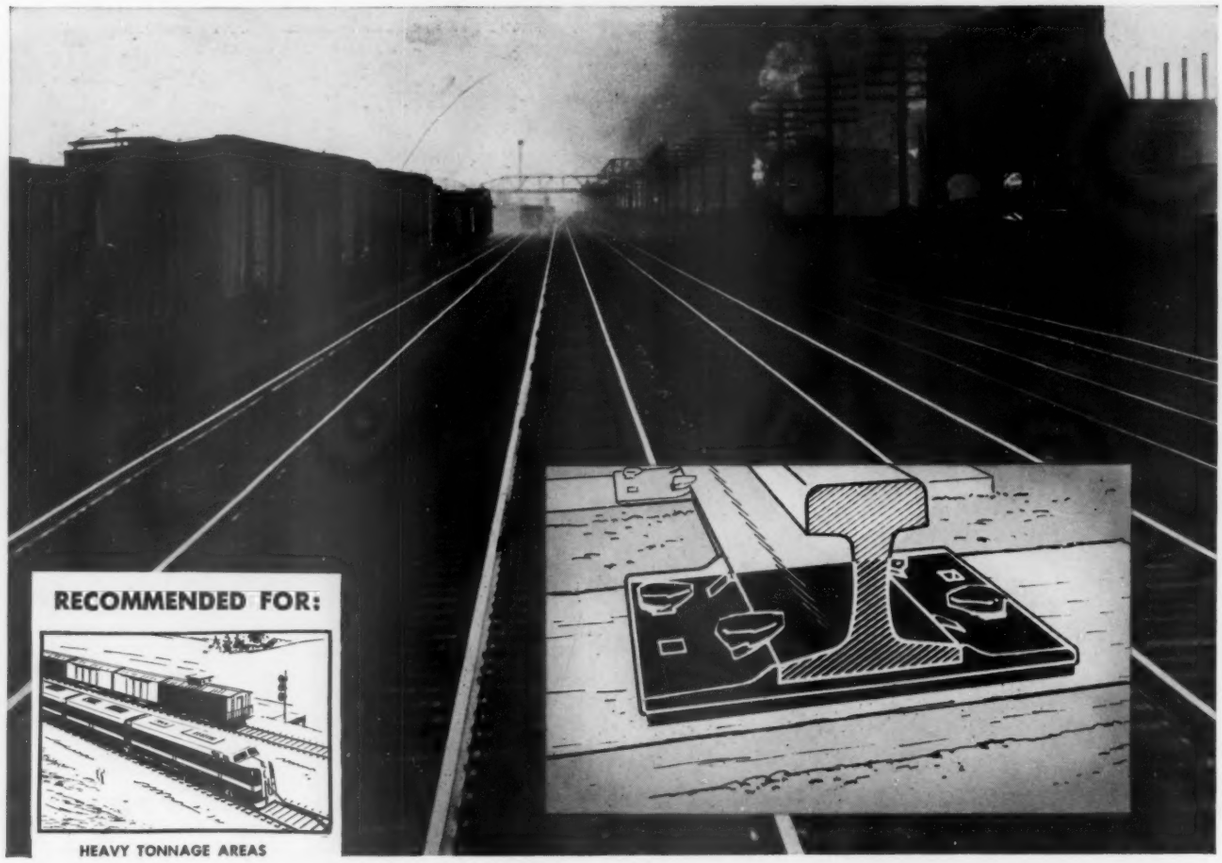
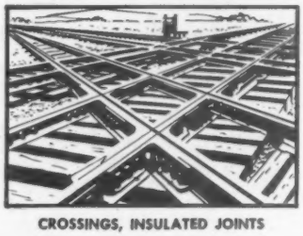


RECOMMENDED FOR:

HEAVY TONNAGE AREAS

CURVES, TRESTLES AND BRIDGES



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"PUBLIC APATHY may be traced to failure of the transportation industry to tell the facts in terms of the self-interest of various segments of the public."—*David I. Mackie, chairman, Eastern Railroad Presidents Conference.*

"ON THE BASIC ISSUES that confront all regulated carriers, we have a common ground. But there can't be any stilettos up the sleeve." —*John V. Lawrence, managing director, American Trucking Associations, Inc.*

"Time Lag" Bill Favored

"One of the most important subjects to come before Congress in a decade"—Senate Bill 1461—meets with full approval of the Northwest Institute of Transportation of the Transportation Association of America

KEYNOTE OF THE MEETING

"The users of transportation must pay the national transportation bill.

"There are several methods of doing this. One is the present system whereby a larger amount is paid at a later date to make up the deficit occasioned by the time lag that occurs after the Interstate Commerce Commission has been petitioned for rate relief. This is most unsatisfactory as it seriously weakens the financial structure of our transportation system, unduly disturbs the competitive relationships in private industry, and is a prime factor leading to nationalization of all transportation.

"The second is to pay the transportation bill currently and as it is incurred—as is being done by the great majority of all well-managed industries. When our costs increase, prices are quickly adjusted subject, of course, to the effect of competition. The third way is to subsidize transportation through taxes. Mere mention of this method is sufficient, as it is repugnant to all business and our system of free enterprise. In short, users cannot find basic justification for not granting regulated industries the same rights which they have in pricing their products and services."

With the quoted keynote, Donald G. Ward, director of transportation of the Mathieson Chemical Corporation, set the stage for panel discussion of "The Time Lag Issue" at the Transportation Association of America's Northwest Institute of Transportation in Minneapolis, November 5.

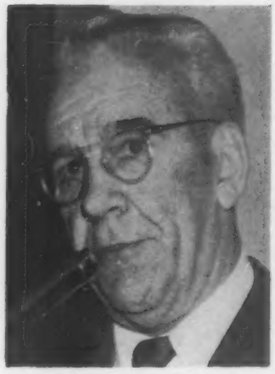
The one-day regional forum was attended by an estimated 520 shipper and carrier representatives and transportation investors.

The "time lag" bill discussion, over which Mr. Ward presided as moderator, consumed the entire morning session and ran over partly into the afternoon. No opposition to the bill came from any of the panel members although some did qualify their approval. Most of them agreed with Mr. Ward when he termed it "one of the most important subjects to come before the Congress in a decade." The panel lacked representation from air and water carriers, and from freight forwarders. However, Mr. Ward reviewed the past position of these groups—as revealed by the final stands taken by their representative panels in the association's Cooperative Project on National Transportation Policy (*Railway Age*, January 26, page 11). The air transport and freight forwarder panels of the T.A.A. project have said they would not oppose the bill, and the waterway panel has approved it with only minor qualifications.

Here's how the Northwest Institute's panel looked

at the legislation now under Senate consideration:

PIPELINES NOT OPPOSED

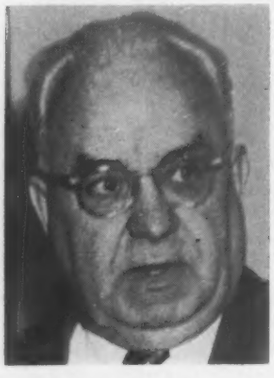


. . . reports Gordon C. Locke, executive secretary, Committee for Pipeline Companies, Washington

"Pipeline transportation is perhaps included in the language of this bill. However, because our rates are determined almost entirely on the value of the carrier's property, the bill is not of any great use to us—at least not at present.

"I prefer the bill as it is now amended—without reference to that nebulous thing 'attraction of equity capital' which was earlier proposed as an explicit aim of regulation to be included in the amended statement of national transportation policy of the Interstate Commerce Act. I believe that that phase of the statement could have hit back at the railroads later. I think the bill should be passed as it is now amended."

"IMMEDIATE ACTION IS NEEDED"



. . . warns Robert J. Bayer, editor of Traffic World

"Anyone concerned with business must realize the bad economics involved in the compulsory interposition of a long period of time between rises of material and labor costs in the transportation industry, and the corresponding increases in charges to meet those costs. If this interposition was effective upon business generally, the result might bear some semblance of equity. But such a course would constitute general price fixing—a socialistic trend we are not yet ready to accept (even though our government seems to have taken the paradoxical position of guaranteeing, with taxpayers' money, the income of some industries while standing in the way of prompt and free self-attempts to protect income by transportation companies).

"It seems a fair suggestion that means be found to reduce time required to permit transportation to meet increased costs by increased charges. But the tendency to correct procedural deficiencies by legislation needs careful watching."

"IT WILL HARM NO ONE"

. . . points out Eldon Martin, general counsel of the Burlington

"The bill will allow us to fit our prices to our costs. It will enable carriers to avoid irretrievable losses which, in past rate increase delays, have cost carriers more than $1 billion. It can harm no one. Shippers will get more or less automatic refunds if any increase is found unreasonable. And in the long run, I believe you will get better rate adjustments than in the past because the bill will allow the commission to study the case without being under such great pressure of time.

"I believe, too, that the bill will reduce the overall net cost of transportation. For one thing, that $1 billion lost to the carriers would have gone into income accounts and would have reduced the need for subsequent increases. For another, it would have enabled the purchase of more cost-cutting investments—diesels, signal systems, yards, etc., for railroads and similar improvements for other carriers."

"INFLATION IS STILL WITH US"

. . . says Robert E. Thomas, Pennroad Corporation, New York

"The problem of rate lag has been viewed by investors for a long time as the No. 1 problem facing

American transportation. Some people might urge the view that the postwar inflation has now run its course and rate lag, as a problem, will consequently disappear. I consider such arguments to be far from realistic.

"Labor wields great power. Pressure continues for round after round of wage increases. Living costs rise with each round of wage increases, and with each rise in living costs built-in, automatic escalators give wages yet another boost. Our government continues to operate at a deficit, and one has to be sanguine, indeed, to visualize such a thing as a balanced budget. The careful observer of economic and political trends can only conclude that inflation is still with us, and for the transportation industry, rate lag remains one of the major unsolved problems of the postwar era.

"If rate lag is not eliminated, our privately owned transportation system may be brought to the brink of bankruptcy and public ownership. Because of rate lag during World War II, many motor carriers were either forced out of business or on the verge of bankruptcy before rate relief was granted. Because of rate lag amounting to about $500 million in 1946, the railroad industry curtailed maintenance and capital expenditures with the inevitable, but hard to prove, impairment of service and ability to compete. Investors were shocked and we had a substantial decline in railroad security prices. Some investors learned that railroad securities were nothing more than speculations. Some investors swore never again to invest in rails. Under conditions such as these, how could any railroad raise new equity capital?

"I hope the bill will be enacted into law during 1954."

"HOW LONG CAN WE WAIT?"

. . . asks R. C. Waehner, general manager of Lever Brothers Company's distribution division

"The time lag bill corrects an unjust situation and permits carriers general rate increases when, in the carriers' judgment, such increases are necessary to run a reasonably profitable business. The bill does not contemplate relinquishing control of rate levels or rate relationships, as, if their increases are found unreasonable, users will have the privilege of securing refunds. The bill does not suggest any change in the policy of ratemaking for individual rates for individual areas, but only when general economic conditions warrant an overall increase in income.

"I am sure a better bill could be written. But how long can we wait without fear of danger to our national transportation system? The bill, as it is now amended, is based on five years of intensive study by over two hundred leaders and experts of the National Cooperative Project of T.A.A. Naturally, with their many divergent interests, complete accord cannot be found. But we do believe the bill represents the greatest good for the greatest number of people.

"You need only look at the relationship of the industrial might of this country to that of other countries, and you will see a direct parallel in their relative position and their transportation system. Transportation is your problem and my problem as citizens and taxpayers. I recommend that each of you spend time studying the basic, economic factors that presently confront our transportation system; that you contact your senators and representatives for enactment of legislation which will strengthen this important part of our economy. If individually we fail to put forth this effort, we will have only ourselves to blame should our transportation system become nationalized, and service degenerate to a point where the economic progress of our country is directly affected."

"IT AVOIDS FRINGE ISSUES"

. . . says R. J. McBride, general manager, Regular Common Carrier Conference, American Trucking Associations

The sole purpose of the bill should be "expedition of needed rate increases," Mr. McBride asserted. "Fringe issues, such as the proposed modification of the ratemaking principal, would only have added confusion. I support the bill—especially as it is now amended."

MODERNIZING REGULATION

The institute's afternoon session was devoted to discussion, by the same panel members, of ways and means of modernizing the system of federal regulation. Discussion centered about the idea of a single transportation regulatory agency (including the Civil Aeronautics Board) and whether or not such a "super" agency should be organized along functional (safety, rates, etc.) lines or by carrier types.

Alternate ways of selecting the I.C.C. chairman, and

the commission's relationship to other branches of the government, also came in for discussion. The session was moderated by George P. Baker, professor of transportation, Graduate School of Business Adminstration, Harvard University. Earlier in the day, Donald D. Conn, executive vice-president of T.A.A., described the transition of transportation from monopoly to competition.

The institute was sponsored by the Northwest Regional Forum of T.A.A. in cooperation with the Traffic Club of Minneapolis, the Minneapolis Traffic Association, the Minneapolis Chamber of Commerce, the St. Paul Association of Commerce and the Transportation Club of St. Paul. Earl B. Smith, chairman of the forum, was unable to preside over the institute meetings due to the press of his new duties as director of transportation and communications in the Department of Defense in Washington. In his stead, Alvin M. Thomas, acting director of traffic of General Mills, Inc., handled the assignment.

CARRIER COOPERATION and PUBLIC APATHY

The luncheon session of the institute was held jointly with the Traffic Club of Minneapolis. John V. Lawrence, managing director of the American Trucking Associations, and David I. Mackie, chairman of the Eastern Railroad Presidents' Conference, were the speakers.

Mr. Lawrence spoke of intercarrier cooperation within the framework of T.A.A.'s National Cooperative Project. In so doing, he skirted around remarks contained in printed copies of his address about ". . . one 'co-operator' [the railroads] jockeying for a competitive advantage while pretending to be working for the interest of all." The advance copies referred to legislation "to promote quick action on general increases in rates which . . . would permit holding down certain rates of a competitive character—with naturally disastrous results to the trucking industry—that our railroad friends attempted to get through."

Mr. Lawrence did say that "no form of transportation today could long exist without the help of the trucking industry. And by the same token, the trucking industry gets a considerable portion of its business from other types of carriers. We are all interdependent to a greater or lesser degree. And while in many areas we compete among each other for the same freight dollar, there are other areas where our interests are identical. Failure to cooperate with each other in such non-competitive areas is economic idiocy, and, if carried to extremes, could be economic suicide.

"There will always be differences between the various forms of transportation in their efforts to get as large a share as possible of the available traffic. But on the basic issues which confront all regulated carriers, we have a common ground—that same broad area of interests to which T.A.A. is dedicated—and it is there that we must make a united stand. If there is co-operation, however, it must be honest cooperation. There can't be any stilettos up the sleeve."

Mr. Lawrence added that one of the greatest headaches for the motor carrier industry today is the congestion in urban areas at the "ultimate terminal"—the metropolitan offices, shops and plants where deliveries must be made in tight quarters. Shippers who consider the adequacy of their terminal facilities help lower the cost of transportation, he said.

Referring briefly to the ton-mile vehicle tax now in force in some states, he said that one trucker found it cost five times as much to determine the tax as it did to pay it.

Mr. Mackie termed the "regalia of regulation we face . . . the foremost problem of common carrier transportation today." He said that "instead of insuring excellent, coordinated transportation service at low cost under private ownership and operation, regulation in today's competitive scheme of things has the effect of doing the opposite. It stifles, rather than stimulates enterprise. It can only mean less, not more or better mass transportation service."

"Such problems," he continued, "are born of public apathy—of the failure of the public to comprehend the importance of common carrier transportation in our economy, or the patent danger to our economic system that comes when government takes over the management functions of private business. Public apathy is, of course, in part the result of failure on the part of the transportation industry itself to fully tell the facts in terms of the self-interest of the various segments of the public.

"Unfortunately, industry in general has not always told the free-enterprise story as effectively as it might. Nor are facts alone on the present situation enough. The public cannot be expected to urge Congress to legislate wisely with respect to transportation if the transportation industry itself is unable to suggest or support a reasonable, modern and comprehensive program of regulatory reform. This is where T.A.A. comes in.

"I believe there has never before in transportation history been a program directed at solving the problems of the industry that has equalled in breadth of conception the cooperative project of T.A.A. But the job has just started. It is essential that we dramatize to the American public the imperative need for transportation regulation reform in its own self-interest. And Congress must be shown the merits of the recommendations. The people, and through them their congressmen, must be helped to understand that this is not a case of seeking selfish relief for the transportation industry, but rather one of removing some of the existing restraints upon common carrier transport—for the good of us all.

"It will take each of you and every other articulate spokesman transportation can muster—working together and through T.A.A.—to gain for common carrier transportation the degree of freedom it must have, not merely to permit it to exist under private operation and ownership, but to encourage it to be enterprising."

How Santa Fe Radio Broadcasts Flood Warnings

Supervisors in desert territory on the Santa Fe can now receive, via radio, advance warning of cloudbursts, six hours before the resultant flash floods, coming down mountain stream beds, will arrive where the railroad crosses or parallels the stream.

In western Arizona, a stream, the Sacramento wash, parallels the Santa Fe line for approximately 39 miles, from near Griffith to Topock, where it flows into the Colorado river. The tracks cross the wash at Mojave Gap, a few miles west of Yucca. Although the wash is normally dry, cloudbursts have, in past years, caused flash floods that resulted in excessive damage to the railroad at Mojave Gap.

Now the Santa Fe has installed a system to give advance warning of such flash floods. The part of this system known as the flood detector is located in the bed of Sacramento wash, near where it is crossed by U.S. Highway 66, approximately 15 miles up stream from Mojave Gap.

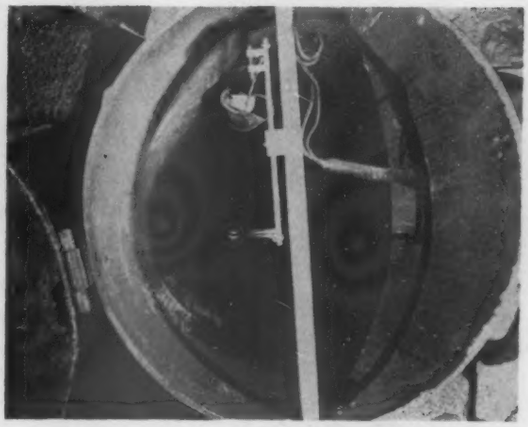
The flood detector is mounted in a small well, made of a section of 30-in. concrete pipe with holes to allow water to enter freely but to reject debris. The detector includes a small float, which, when raised by three inches or more of rising water, will operate an electric contact, energizing a radio transmitter that broadcasts Morse code letters "GF" (Griffith Flood).

This radio "GF" call is picked up by a radio receiver at Griffith, and by any freight train in the area equipped with head-to-rear radio. The Santa Fe station at Griffith is about 6.5 miles across country from the flood detector. On being received at Griffith, the "GF" code is automatically connected to the dispatcher's telephone line, and transmitted to Winslow, Ariz.

The float controlled radio is set to broadcast the "GF" call for 10 minutes, even though the well including the detector may be washed away. The "GF" signal will break in on any transmissions being made over the dispatcher's telephone, but, since a 10-minute transmission of this nature might interfere with an important train order or other communication, the dispatcher can silence the "GF" call on his line, although the transmitter will function until the set time is up.

A flash flood will travel down this section of the stream bed about 2.5 m.p.h., which means that the dispatcher has about six hours advance warning while a flash flood is advancing the 15 miles from the detector to where the Santa Fe crosses the wash.

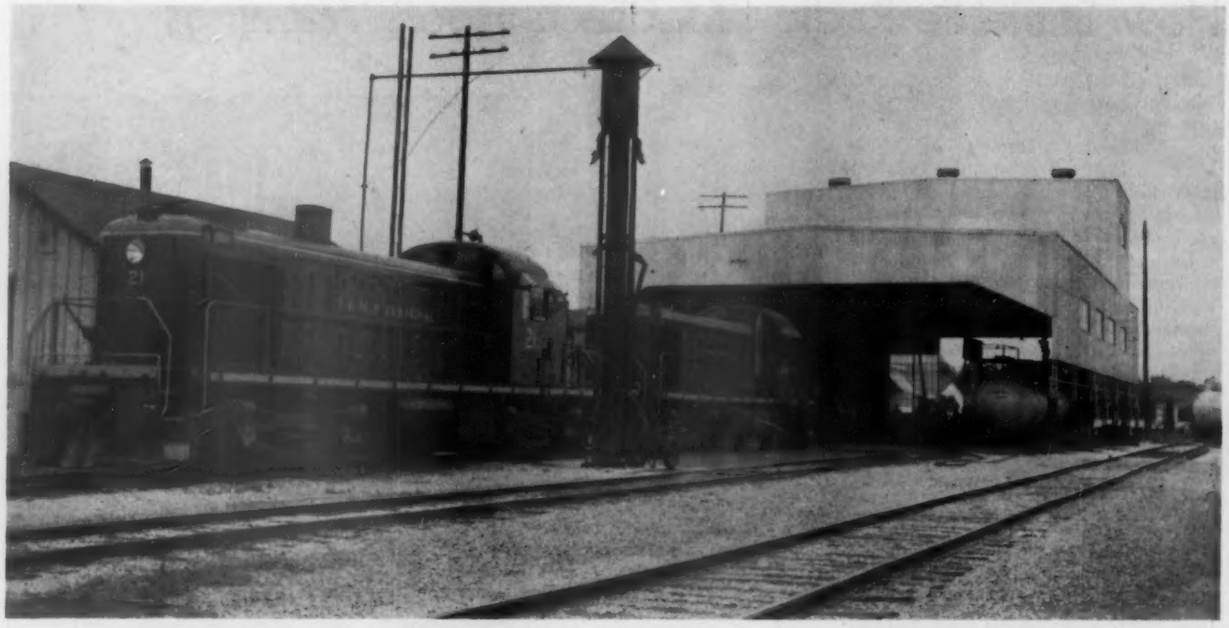
At the detector location near Highway 66, the radio equipment includes a Hallicrafter Littlephone packset transmitter. This transmitter is supplied by a set of eight Edison 500-a.h. cells of primary battery. The antenna is an Andrew corner reflector.



THE FLOOD DETECTOR includes a float switch mounted in a section of 30-in. concrete pipe set near the edge of the stream bed.

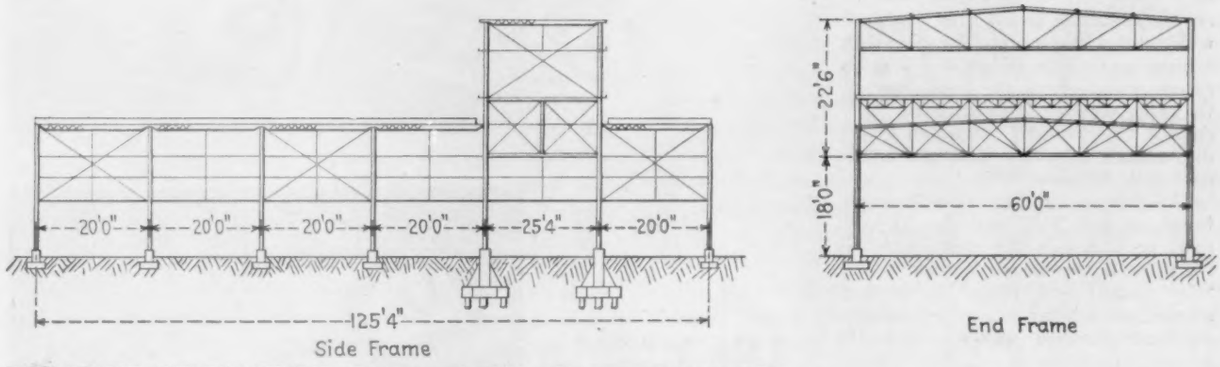
RISING FLOOD WATER operates the flood detector, causing this radio transmitter to broadcast the Morse code "GF" for 10 minutes.

THIS RADIO AT GRIFFITH receives the "GF" code and automatically puts this warning on the dispatcher's phone line.



$90,000 Diesel Shop for TP-MP

Plant cares for 12 locomotives—Novel crane makes it possible to handle unusually heavy work in a small shop



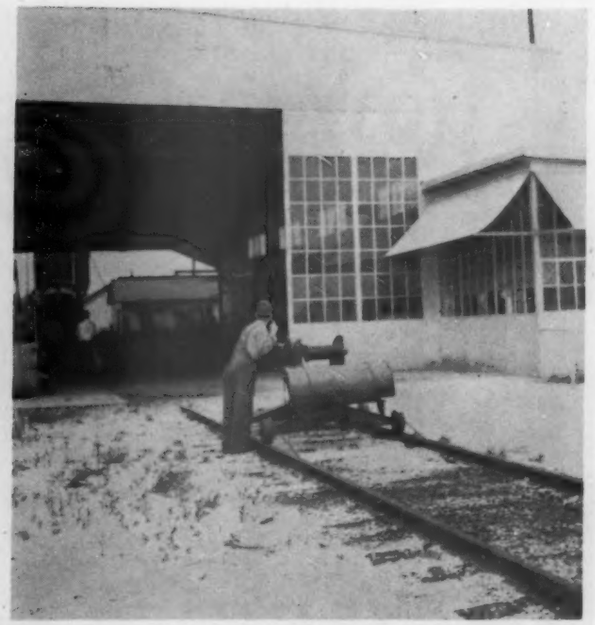
SIDE FRAME AND END FRAME of the shop building. The crane traverses the 25-ft. 4-in. bay, across two diesel locomotive tracks and one car repair track.

A diesel shop, with a 100-ton crane hoist and a 100-ft. concrete engine pit, shop machines, storerooms, office and appurtenances, has been built at Avondale, La., by the Texas Pacific-Missouri Pacific Terminal of New Orleans at a cost of $90,000. The shop handles running and heavy repairs to nine Alco Switchers—three 1,500 hp., four 1,000 hp. and two 660 hp. units—and heavy repairs on three additional 660-hp. Alco switchers owned by the New Orleans & Lower Coast, a Missouri Pacific short line serving the west bank of the Mississippi river below New Orleans. The shop, approximately 60 ft. by 125 ft., also makes heavy repairs to tank cars.

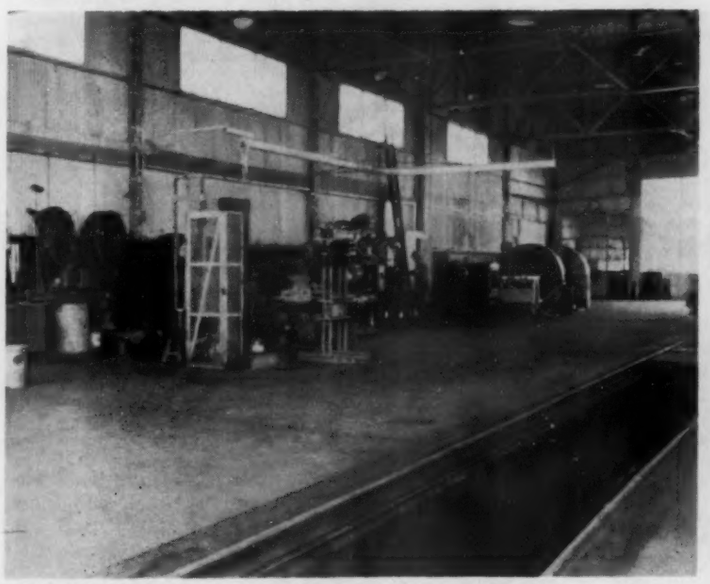
A feature of the facility is an unusual locally designed and fabricated overhead crane hoist with a runway at right angles to the two tracks serving it. The crane has a lifting capacity of 100 tons for the four main lifting screws; 30 tons for the two auxiliary screws which are telescoping and have a maximum lift of 18 ft.; and 2 tons for the auxiliary Yale hoist which operates on the lower flange of the south girder of the crane trolley.

The main lifting screws are driven by four 7½-hp. motors and lift the body or chassis of the locomotive off the trucks and traction motors and move it to blocks on the parallel track. The auxiliary telescoping screws are

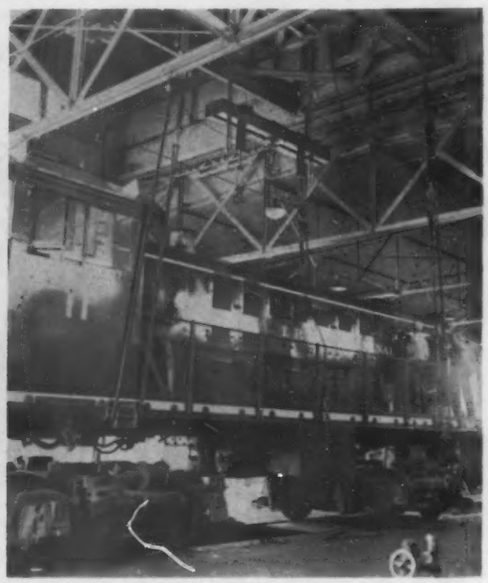
LOCOMOTIVES are sanded by a shop-made elevator of ½-cu. yd. capacity driven by an electric motor.



TRUCKS and locomotives are moved about inside the shop by a home-made winch powered by a gasoline engine.



THE SHOP (left) has a single bay with two through tracks, one of which has a pit 100 ft. long. FOUR MAIN SCREWS (right) of the shop-made hoist have a capacity of over 100 tons and can lift a complete unit.



driven by two 5-hp. motors and are used for lifting and turning trucks, removing traction motors, engine hoods, engine and generator, compressors, etc. All of these six crane motors are driven through built-in reduction gears and controlled from the floor by special switches. All are equipped with automatic safety stops. The auxiliary 2-ton Yale hoist is used for pulling pistons and liners, handling single pairs of wheels and lighter parts.

The overhead rails of the crane are mounted on the top chords of two steel trusses 10 ft. deep and 60 ft. long with a span between rails of 25 ft. 4 in. The four main columns supporting the crane and specially designed welded bar and plate columns, 8 inches square, are of very small cross-section for a 100-ton crane, and the smaller building columns are of similar design, effecting a saving of 20 to 25 per cent in weight of steel over standard structural sections of equal column strength and axial compression ratio.

The shop has been in use since 1948 and has proved thoroughly satisfactory for terminal and short line railroad diesel maintenance. A broken crankshaft has been replaced and heavy repairs are being made which normally require the facilities of a major shop requiring an investment of 5 to 10 times the investment at Avondale.

D. A. Edwards, speaking, told RSPA members and guests that his department gives the C&O's top management figures for revenues and expenses on the fourth working day after the end of the month. Other members of the panel were: At extreme left, Paul A. May; to the right of the speakers' stand, H. D. Murphy; and, extreme right, G. M. Craig. At speaker's right is B. E. Wynne, assistant to comptroller, B&LE, president of RSPA.

AN R.S.P.A. WORKSHOP SESSION . . .

What Operations Research Can Do

Panel discusses application of techniques to maintenance policy-making and assays advantages to management of early revenue reports

"HAVE REPORTS EARLY; HAVE THEM READABLE"

The chief aim in life of our office is to give top management facts and figures early. By early, I mean soon enough to provide them with an incentive to take action. Delay in reporting not only discourages management from making decisions; it furnishes them with an excuse for not taking action.

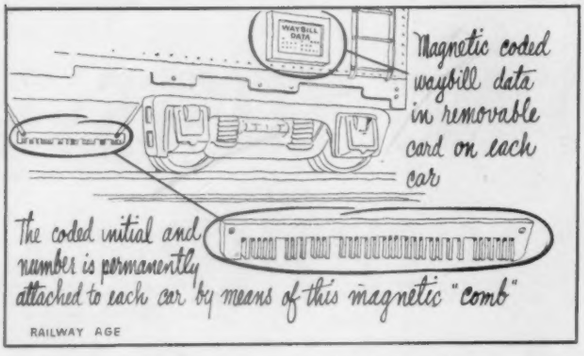
Much the same reasoning underlies our second aim, making the reports readable. Particularly at the top management level some degree of predigestion of raw material is essential if the report is to serve its purpose. . . . First issued is a four-page "Flash" report which goes out on the fourth working day. . . . Our full report for the month is issued on the eighth working day based on data received two days earlier. . . .

How much does this cost? I don't know but I am inclined to say not much. Let's look at it this way. Our accounting activities on the C&O cost our stockholders close to $7 million a year. Isn't it worth spending a small fraction of this to make the figures of real use to management?— ***D. A. Edwards, assistant budget director, C&O.***

The science of operations research is making available to railroads a powerful set of analytical tools which already have been used effectively in other industry and by the armed forces. These tools can be of equal value to the railroads in helping them to find solutions to some of their more complex problems," said Dr. Glen D. Camp, consultant to the president of Melpar, Inc. (a subsidiary of Westinghouse Air Brake Company).

This observation was made to approximately 150 persons attending the November 5 sessions of the three-day meeting of the Railway Systems and Procedures Association at Chicago, November 4-6. Dr. Camp presented a panel of five speakers, one of whom posed some problems which he believed might be solvable by Operations Research methods. The other four speakers gave their thoughts on which techniques might be applied to specific problems in helping the carriers find a way out of some of their difficulties.

R. D. Lake, assistant to general manager of the Union (Pittsburgh), said that he thought it possible Operations Research might be able to help railroads decide



ARTIST'S CONCEPTION of "gadget" which could be devised to transmit numbers and initials of cars to yard offices, thus verifying advance consists received by the yard. Similar devices are used for different purposes in manufacturing industries.

how they should cycle heavy repairs on diesel locomotives. Mr. Lake stated that he had heard that cycles adopted by the various railroads varied from four to ten years. The longer the repair cycle, the less would be the necessary capital investment in locomotives. However, there were many variables to be considered in setting up the cycle. It was accurate measurement of these variables, such as the operating conditions, which he said he believed the research people could accomplish with benefit to the railroads.

Terminal Switching Problems

Mr. Lake also described some of his line's terminal switching problems. When the Union receives cars in interchange from its trunk line connections the cars are likely to be in "willy-nilly" order, so far as Union operations are concerned. Generally, the Union has to do some classification work at or near the interchange point before the cars are moved to another point for further classification. This costs the Union extra expense for car hire, crew interference with other crews, and damage to cars and lading because of the large amount of switching.

Mr. Lake expressed the opinion that "O.R." could shed some light on whether or not the trunk lines could do all or part of the classification for the Union without real added expense. Also, he said, the reverse might apply, where on cars outbound to the trunk lines the Union might be able to do all or part of the classification work for those carriers. In short, his question was: Is there some place, in any large volume point-to-point movement, where classification can be done most economically for the railroads as a whole, with the best service results?

No one answered the question specifically. However, C. B. McGuire, of the Cowles Commission for Research in Economics at the University of Chicago, indicated that Operations Research might be able to give Mr. Lake and other railroaders a specific "yes" answer to the question. Mr. McGuire said that while the Cowles group had not yet had the opportunity to test its theories in practice, talks with railroad men as to their conclusions gave them some hope that they would get such a trial and that they were much encouraged by the helpful—and hopeful—attitude of the carrier representatives.

Mr. McGuire said that his group's studies showed that the railroads generally already realized that there was something to the idea of distributing classification work over a system of yards on one, or more than one, line. Setting up such a classification scheme, he said, would necessarily include studies of all delay factors at the yards, including scheduling of manifest trains.

C. W. Churchman, director of the operations research group at Case Institute of Technology, Cleveland, stated that on the basis of some work his group had done with the Chesapeake & Ohio, he believed that O.R. could help the railroads to solutions of problems involving scheduling or the determination of the best maintenance-replacement programs. Dr. Churchman said that one problem which looked like it might yield to solution by O.R. techniques is whether to run 20 per cent more trains and thereby increase freight car utilization by perhaps 10 per cent. Industry has similar scheduling problems, he said, and frequently the answer is to run more "trains" of shorter length and get better utilization of all the productive equipment.

In setting up maintenance-replacement policies, Dr. Churchman went on, industry has found frequently that even though some units of equipment might still have left a period of service life, it is better overall to replace all of them at once, for piecemeal replacement brought about such high labor costs that the wasted service life of the equipment still useful was more than offset.

Other questions to which he believed O.R. could give the railroads answers included these: How can railroads utilize for management control purposes all the information available to them on a daily basis? Should a railroad run more "hot shot" freight trains? What effect should carload traffic have on a railroad's policies in the l.c.l. and passenger fields? What should be the proper relationship between claim payments and the cost of a railroad's loss and damage prevention program?

Hot Boxes

Roger R. Crane, director of Operations Research of Melpar, Inc., also indicated that O.R. techniques could help railroads in determining sound maintenance-replacement programs. Mr. Crane addressed himself particularly to hot boxes. Study of the Association of American Railroads' hot box data, he said, indicated clearly that maintenance, or lack of it, is most important in keeping hot boxes at a minimum. He pointed out that on some roads the record of their own cars was better than that of foreign cars, while on others the record of foreign cars was better than that of the home cars. This, Mr. Crane pointed out, made it clear that such failures (hot boxes) were not a chance occurrence, but a result of accumulated "experience" of the car in receiving bad handlings, poor packing of journal boxes, etc.

Mr. Crane also said that Operations Research scientists could use the technique of linear programming to help the railroads do economically their work of distributing empty freight cars. (See *Railway Age*, April 20, page 71)

FROM LOADING TO UNLOADING

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GIVES MAXIMUM PROTECTION

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LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

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PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

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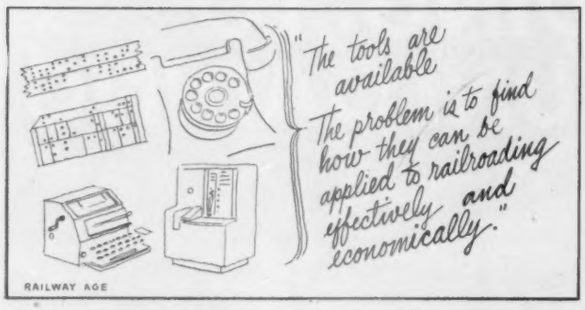

ONE OF THE SPEAKERS on the "Operations Research" panel, James Hosken, told the meeting that there were many new information handling devices which the railroads apparently have yet to try in efforts to speed up such processes.

However, he said, O.R. could be of most help in nationwide distribution such as that done by the Car Service Division of the A.A.R., or where the distribution involves a large railroad.

Mr. Crane's audience questioned him most about his description of Melpar's application to yard operations of the queueing or waiting line theory. In this case Melpar had made a study of operations in an actual yard and tested its theories by applying the findings to the working of the yard. Therefore, Mr. Crane, went on, he and his group now are sure that they can construct a mathematical or paper model of a yard, including all the important factors in a yard operation. This is important because if such a model can be built the results of changing yard operating factors can be predicted and studied with relatively little cost. Factors that must be considered, he said, include, among others, the rate at which car department forces inspect cars; the rate at which cars are classified: utilization of switch engine time; the rate at which trains arrive; and the time taken to process paper work.

Adaptability of Electronic Devices

Another speaker on the O.R. program was James Hosken of Arthur D. Little, Inc., consulting engineers at Cambridge, Mass. Mr. Hosken pointed out the advantages and disadvantages of many of the electronic communication and computer devices on the market which could possibly be adapted to railroad uses. As with almost anything, he said, one must weigh the advantages one would get against the urgency of the need for it. For example, he said, it would be relatively easy, but costly, to develop a machine which could read some sort of code from a tape or card or magnetic drum and once the code had been read throw the switches in a classification yard. The question was, Mr. Hosken said, how much would such a device be worth to a railroad, and under what circumstances.

A question was asked as to the desirability of standardizing on codes, since codes seemed to be the thing of the future, with electronic developments coming along so fast. The railroads' need for such a standard code is especially great, the questioner said, because of the complex end-to-end relationships of the carriers. Mr. Hosken suggested that the railroads and others not try too hard to achieve such standardization at this time. Eventually, he said, the manufacturers themselves will decide upon the best codes and make them standard. One of the program items on the first day was a brief description of the Pennsylvania's and New York Central's improved procedures for handling passenger ticketing and reservation work at Pittsburgh and Cleveland, with emphasis on the conditions which determined the character of the set-up. This presentation was by F. O. Robbins and Joseph Sweeder, Jr., associates in the consulting firm of Robert Heller & Associates, Cleveland, with an assist from R. A. Wright of the Pennsylvania's passenger traffic department. (The new system at Pittsburgh was described in *Railway Age*, May 18, page 144.)

Equipment and Techniques

Some of the equipment and techniques used in the new system at Pittsburgh, Mr. Robbins said, include visual representation of space available on the most popular trains serving passengers from Pittsburgh to other cities; preprinted space coupons and revenue (Pullman) tickets quickly available to ticket sellers; rail tickets, interline and local, produced by the Burroughs Ticketeer; facsimile wire transmisison of space requests from city ticket offices and some outlying stations, as well as from large commercial users of space, to the central bureau, and filling of space requests from these places by the same means; quickly determined charges for rail and Pullman space through the use of microfilmed rate sheets and the Filmsort microfilm reader. These features, coupled with facilities for diverting difficult interline or other sales to special service desks, plus building up the will-call and delivery services, have made it possible for the PRR to reduce by as much as 84 per cent the amount of time the patron must spend in line in front of the ticket window or on the telephone in order to get the necessary documents for transportation or to make a reservation.

In the studies leading to setting up the new handling system, it was discovered that there were several big reasons for the passenger standing so long in line at the ticket window. One of these was the Pullman diagram, available to only one person at a time in the reservation bureau, and the other was the mixture at the ticket window of requests for both simple and complex ticket and reservation orders.

Investigation, Mr. Robbins said, showed that at Pittsburgh 45 per cent of all sales were of simple preprinted coach tickets, requiring only 10 per cent of ticket clerks' time. Another 55 per cent of ticket clerks' time was consumed in selling reserved accommodations to passengers, with such sales accounting for 43 per cent of total. The remaining 12 per cent of ticket window transactions were divided among can-

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"We are not interested in telling you how to run a yard, but in seeing whether economic and mathematical techniques will not assist in a better distribution of work between yards and forces—and thereby achieving a better overall operation."

—C. B. McGuire, Cowles Commission, University of Chicago

"Use machines and mathematical techniques to compress time and experience. Thus many different methods and procedures can be tried, altered, and measured until the one which fits best is found."
—Glen D. Camp, Melpar, Inc.

cellations and redemptions, special handling (clergy, government orders) and complicated interline movements. They took up 35 per cent of ticket window time. When the new system was set up they were moved to a special handling room.

With the Pullman diagrams eliminated, and almost instantaneous determination of space available, by both the ticket clerk and patron, the average ordinary reserved space transaction at Pittsburgh takes only about one minute from the time the patron makes his request until he gets his tickets and his change, Mr. Robbins stated. Sale of the preprinted space coupons and revenue tickets, by eliminating the average of 18 to 22 pen-and-ink entries per coupon, also plays an important part in this time saving for the passenger, Mr. Robbins said.

The Flash Report

The morning session of the first day was given over entirely to "early financial statements and prompt information to management," with H. D. Murphy, partner in Price Waterhouse & Co., as chairman. Mr. Murphy indicated that more and more firms are finding that the standard accounting figures frequently are history rather than a help as management controls. And in this dynamic era, he stated, keeping currently abreast of developments in one's business frequently is the difference between prosperity and bankruptcy.

Mr. Murphy called on D. A. Edwards, assistant budget director of the Chesapeake & Ohio, to tell how the management of that company is kept informed of its financial position in almost up-to-the-minute fashion. Mr. Edwards stated that on the fourth working day of the month the management of the C&O had "estimated" figures which, as he said, gave management an incentive to take action. "Delay in reporting," Mr. Edwards continued, "not only discourages management from making necessary decisions; it furnishes them with an excuse for not taking action."

The C&O's report is not a terrific lot of indigestible figures. Instead, the report which comes out on the fourth day (it's called the "flash" report) is only four pages long, and uses mainly charts and comments rather than columns of figures. Four working days later C&O has its final report, which again relies primarily on charts and comments rather than columns of figures. The income statement and the balance sheet are relegated to the back of this report.

Such fast and accurate reporting from the revenue standpoint, Mr. Edwards said, is possible because a daily report is received by his department from the auditors of revenue on C&O's two districts. By noon of each day revenues for the preceding day are thus available. These estimates, he indicated, usually vary from the actual figure, as eventually determined, by very small amounts. Estimates of revenues for one class of traffic in September of this year, for example, were only $23,000 off the actual total, which was over $8 million.

Some of the C&O accounting department personnel explained in outline how they make the "estimates" of revenues and expenses so close to the actual. In many cases, actual figures for both revenues and disbursements are available for almost the whole of the month by the end of the month. Application of "factors" enables the accounting people to come very close on their figures where it is necessary to estimate revenues and expenses for the remaining few days of the month.

Industry Does It Too

Paul A. May, controller of Mine Safety Appliance Company, Pittsburgh, stated that any good reporting system should contemplate getting out one's figures by the fifth to eighth working day following the end of the month in which the business occurred. To do this, he said, it is necessary to set a date on which one wants to get out the reports, and then work backward, scheduling the dates at which each department should get its information to the report consolidating forces.

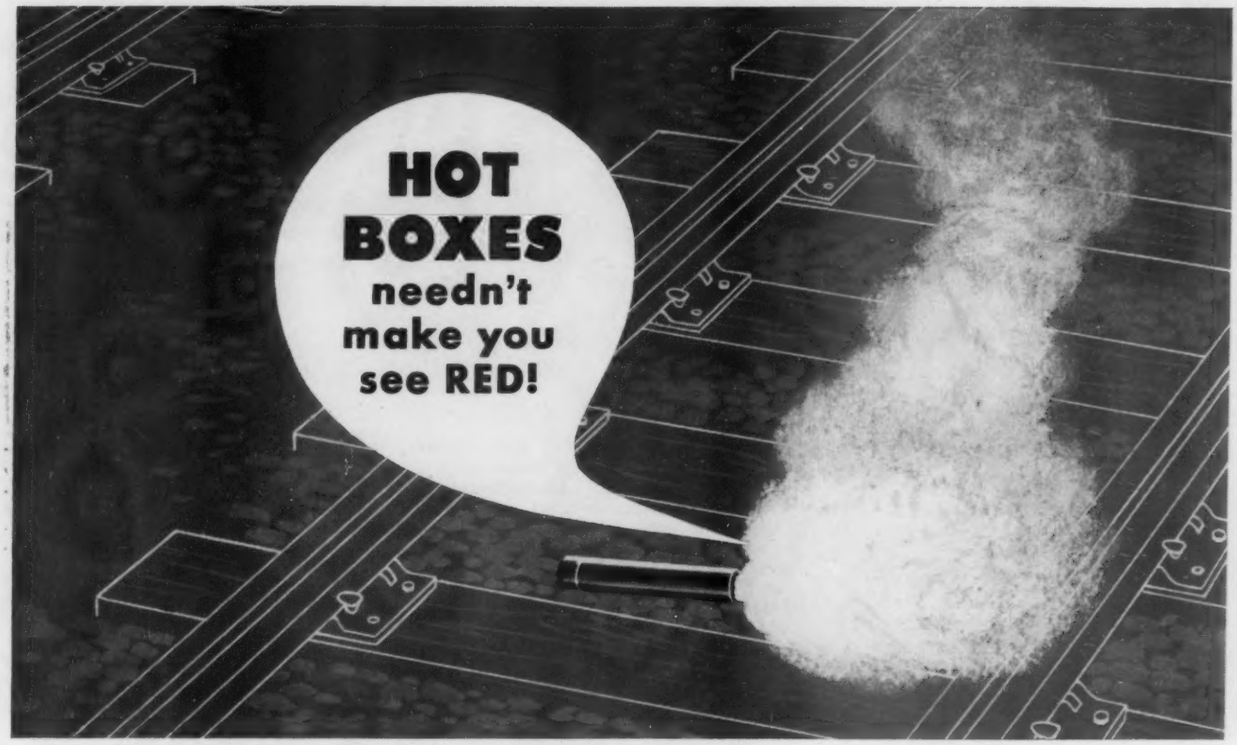
Mr. May went on then to point out how companies with which he had been associated had "licked" various stumbling blocks to early financial reports. His case histories included establishing cash receipts; determining gross revenues; finding the value of inventories; handling a payroll involving 52 branch offices; and the handling of accounts payable.

Extremely Accurate Budgeting

G. M. Craig, general auditor of the Illinois Central, was the last speaker called on by Mr. Murphy. The IC system gives management a report of "revenues, expenses and the result in net income five days after the close of the periods ended the 7th, 14th, 21st and the end of each month," Mr. Craig stated. The Illinois Central's system is tied tightly to its operating budget, with the various departments of the railroad adhering very closely to budgeted expenses. Such budgets for a given month are revised about 10 days before the beginning of the month, in the light of revised traffic forecasts made about the same time.

Once the budgeted month is under way all departments give the accounting department, weekly and four days after the close of the periods mentioned reports of estimated expenses. The accounting department in the meantime has made an estimate of revenues during the same period. These estimates are based on information received from various sources, such as ticket agents, freight agents, etc. So accurate is the IC's budgeting and so well is expense controlled, Mr. Craig concluded, that during the first nine months of 1953 estimated expense for the transportation department varied only 0.5 per cent from actual, while in the maintenance-of-way and maintenance-of-equipment departments the difference was only 0.1 per cent.

During the first day's meeting a description was given of the Union Railroad's mechanized system for dispatching crews. It is outlined elsewhere in this issue.



. . . Eliminate them with SKF FREIGHTER ROLLER BEARINGS

You know, of course, that roller bearing journals will eliminate hot boxes in freight service.

So – when you're equipping freight cars with roller bearings, remember *SKF has equipped more freight cars throughout the world than any other Company.* And remember one name –

SKF FREIGHTER ROLLER BEARINGS

called FREIGHTER because they improve rail freight movement in these 8 important mechanical and economic ways:

- 1st of EIGHT — **Maximum safety – eliminates the hot box problem.**
- 2nd of EIGHT — **Better riding qualities – less lading damage.**
- 3rd of EIGHT — **Minimum wear of wheels and truck parts.**
- 4th of EIGHT — **Low lubrication cost.**
- 5th of EIGHT — **Long bearing life.**
- 6th of EIGHT — **Easy installation. No adjustments at assembly.**
- 7th of EIGHT — **Adaptability to proposed AAR standards.**
- 8th of EIGHT — **Best overall economy.**

Yes, remember SKF FREIGHTER Roller Bearings—made by the manufacturer with the world's widest experience in the application of anti-friction bearings to passenger and freight cars and motive power. 7480

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
– manufacturers of SKF and HESS-BRIGHT bearings.

SKF®
ROLLER BEARING
JOURNAL BOXES

Equipment & Supplies

(*Continued from page* 18)

The Hillyard project will likewise be completed about the first of the year. It involves installation of two-way equipment in 15 diesel switchers and one trainmaster's automobile for communication with the yardmaster's office. Fifteen walkie-talkie sets for checkers and yard clerks will operate on a frequency separate from that used by the other equipment.

Santa Fe to Install 451 Miles of Road Train Radio

The Santa Fe has announced plans to equip all freight trains between Chicago and Kansas City with road train radio. Equipment for the 451-mi. project has been ordered from the Bendix Radio division of Bendix Aviation Corporation. Work is expected to begin shortly and the installation is scheduled for completion about June 1, 1954.

A total of 78 cabooses will be equipped with VHF radio powered by Leece-Neville Axle Lite systems. VHF radio units also will be installed in 85 diesel locomotive "A" unit cabs.

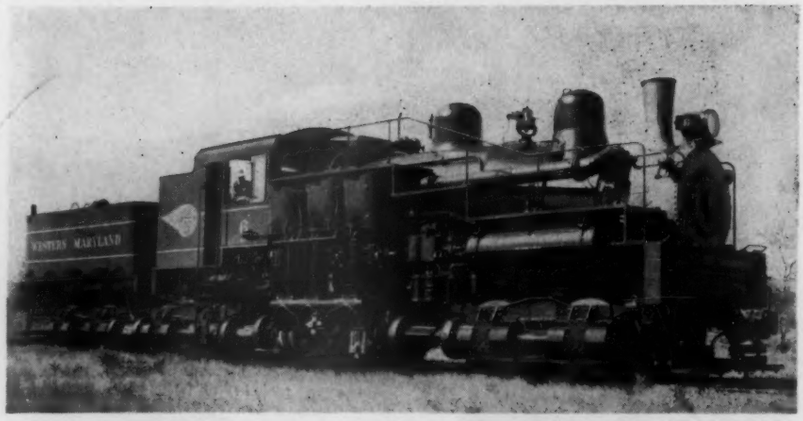
Contact with terminals will be established by the trains when they are within a 15-mi. radius of base stations, which will be installed at Chillicothe, Mo., Shopton, Iowa, and Marceline, Mo., as well as at Chicago and Kansas City. The equipment will be used also for end-to-end train communication.

New Facilities

PRR to Use Welded Rail In New Conway Yard

What is said to be the largest single installation of continuous welded rail ever put into service at one location—enough to construct 112 miles of track—will be used in construction of the Pennsylvania's new Conway freight classification yard, near Pittsburgh.

All tracks in eastward and westward classification yards, eastward and westward receiving yards, and eastward and westward departure yards, exclusive of switches and crossovers, will be of welded construction. Approximately 36,000 welds will be required, as sections of reconditioned rail, reclaimed from heavy main-line service, will be welded together end-to-end to make long stretches of rail for the yard's 150 tracks. The welding operation, carried on at the site, has been underway for some time in order to build an inventory of rail, so as to permit steady progress of installation as track construction proceeds.



WESTERN MARYLAND Shay locomotive which has been donated to the Baltimore & Ohio's transportation museum at Baltimore.

Another important recent addition to the museum is the B&O's own diesel locomotive No. 51, which is said to have been the first streamlined diesel-electric locomotive to have been operated in this country. The museum's collection of historical locomotives now encompasses the entire development of locomotive construction on the B&O.

The new yard, which will cost a total of $34,200,000, will make possible rerouting over easier grades, and speedier movement, of much East-West freight, with special benefit for freight moving between St. Louis, Cincinnati, Columbus and the East, and between Chicago, Ft. Wayne, Detroit, Toledo, Cleveland, Pittsburgh and the East. The capacity of the yard, 22 miles west of Pittsburgh, will be more than tripled. When it is completed, 8,000 cars a day can be classified (*Railway Age*, November 17, 1952, page 17; November 24, 1952, page 58).

Last Spike Driven in CNR's Lynn Lake Line

The last spike in the new $15-million, 155-mile, Sherridon-Lynn Lake line of the Canadian National (*Railway Age*, July 7, 1952, page 134) was driven at Lynn Lake, Man., November 7 by Donald Gordon, CNR chairman and president. Accompanying Mr. Gordon at the ceremonies were the following CNR officers: N. J. MacMillan, vice-president and general counsel; S. F. Dingle, vice-president, operation; J. R. McMillan, western region vice-president; and J. L. Charles, regional chief engineer. Federal and provincial executives also were present.

Surveys for the new route started in 1951. Within 32 months the line was constructed on schedule. More than 2,000 acres of land had to be cleared for right-of-way. The Churchill river had to be spanned at Pukatawagan Falls with three steel truss bridges; the Russell river at mile 104.5 with a steel bridge, and 52 other rivers and lakes with timber bridges.

Canadian National. — Passenger facilities at North Sydney, N.S., are being improved by adding a 16-ft. by 70-ft. extension to the present building to enlarge the general waiting room and also to provide a ladies' waiting room. Improved washroom and toilet facilities also will be installed.

Chesapeake & Ohio. — Directors have approved expenditure of $1,400,000 to reconvert the Huntington, W. Va., shops according to plans devised by a group of employees at the shops. It is estimated the project will cut operating costs by $750,000 a year. The employees prepared a 225-sq.-ft., three-dimensional model, with movable parts, which they brought to New York—at the invitation of Walter J. Tuohy, C&O president—to aid in presentation of their reconversion plan to the board of directors at its regular monthly meeting on November 10.

Under the employees' plan, the Huntington shop will be concerned mainly with diesels, but all passenger-car repairs for the entire C&O system can be done there. The reconversion plan was drawn up without the usual authorization from top management. Mr. Tuohy saw the model recently in Huntington and was so impressed he gave the workers permission to start reconversion of part of the shop.

Great Northern. — Has ordered from the General Railway Signal Company equipment for installation of coded interlockings at Brook Park, Minn., and Minneapolis, and a traffic control system between Delano, Minn., and Willmar, 64 mi.

Kansas City Southern.—A 100,000-sq. ft. building, being erected by a group of Kansas City investors in nearby Grandview, Mo., will be leased by the KCS for use as a transit warehouse. The building is located on a 6½-acre site acquired by the Southern Development Company, a KCS subsidiary. Rail facilities will permit load-

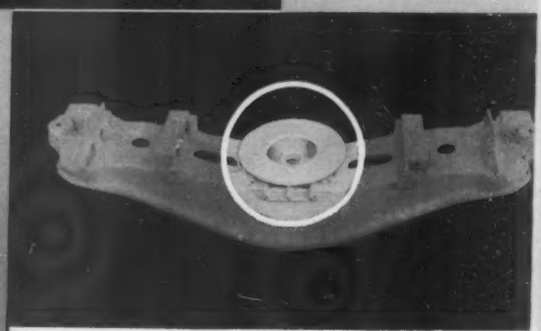
(*Continued on page 123*)

An Important Achievement for Passenger Cars

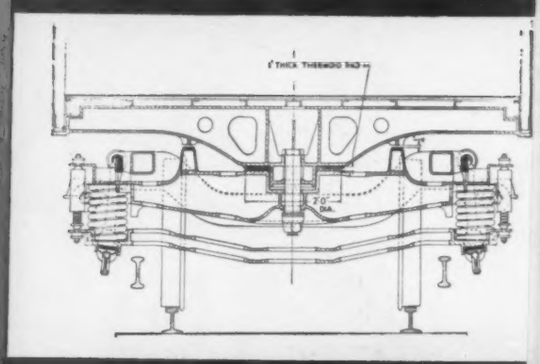
THE CENTRAL BEARING

Provides Better Riding— Cuts Maintenance Costs

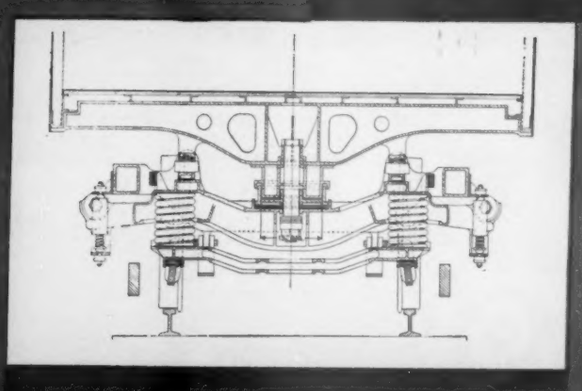
Body Central Bearing Shown on Underside of Cast Steel Platform Center Sill.



Truck Central Bearing Applied to Cast Steel 4-Wheel Passenger Truck Bolster.



Sectional Drawing Through Bolsters Showing Arrangement of 24" diameter Central Bearing.



Sectional Drawing Through Bolsters Showing Design of 15" diameter Center Plate.

The latest in the long list of General Steel Castings' engineering achievements is the Central Bearing — a new type center plate arrangement for new or existing passenger train cars, which combines the functions of the center plate and side bearings.

This new Central Bearing eliminates shimmy (the result of truck hunting), greatly improves riding qualities and increases wheel mileage between turnings. Side bearings are not required, thereby eliminating their original expense and the necessity for their maintenance and clearance adjustment. The Central Bearing requires no lubrication.

Applicable to new cars or to improve existing cars, the Central Bearing assures a substantial saving in maintenance and a better riding car.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

(*Continued from page* 120)
ing and unloading of six cars at a time. Dock space for trucks (largely for l.c.l. shipments) is also provided. The KCS says the warehouse will accommodate manufacturers and large distributors who have need to store products in transit.

Louisville & Nashville.—Additional diesel fuel and diesel maintenance facilities will be built at various points at an approximate cost of $300,000.

National of Mexico.—The freight-car plant being installed in the planned industrial community of Irolo, in the state of Hidalgo, and in which the NdeM will invest $18,603,000, will produce 800 cars annually, according to Roberto Amoros, general manager of the railroad. The plant, Mr. Amoros said, will supply all freight-car needs of Mexico, as facilities will be augmented slowly to increase the yearly capacity to 1,600 cars.

Reading.—Has ordered from the General Railway Signal Company equipment for installation of a traffic control system between Little Schuylkill, Pa., and Port Clinton interlocking.

Santa Fe.—Air conditioning systems will be installed in freighthouses at Fort Worth, Tex., and Dallas, by the Sebastian Air Conditioning Company. Grading and culvert work in connection with a grade revision between Norman, Okla., and Moore, will be handled under contract by Fullerton & Hussey, Oklahoma City.

Financial

Arkansas & Louisiana Missouri. —*Trackage Rights.*—Division 4 of the I.C.C. has reversed an earlier ruling, and has approved an arrangement giving this road and the Missouri Pacific access to a new $25,000,000 pulp plant near Spencer, La. (*Railway Age*, August 31, page 22). Olin Industries plans to build the plant, and the A&LM, a short-line subsidiary of Olin, will extend its lines to serve the new facility. This involves construction of two segments, totaling 1.65 miles, and acquisition of trackage rights over 13.5 miles of MP line. The MP will serve the Olin plant by acquiring trackage rights over one of the A&LM segments.

Division 4 previously turned down the proposal because it said the arrangement would place the MP at a "distinct disadvantage" with the A&LM. It said MP could build a spur track to serve the plant. Following this decision, the two roads and Olin made an agreement, providing for "appropriate division" of traffic between the carriers. Division 4 reopened the case and found this agreement would afford the MP adequate opportunity to participate in the traffic.

Great Northern. — *Acquisition.*— Division 4 of the I.C.C. has authorized this road to acquire trackage owned by the Northwestern Coal Railway Company at Superior, Wis. (*Railway Age*, September 14, page 16). Acquisition of the trackage is part of GN's overall plan for enlarging its Allouez yard at Superior. The coal company facilities include 2.2 miles of lead tracks, together with approximately 3.4 miles of side, spur and storage tracks.

Missouri-Kansas-Texas. — *Recapitalization.*— Donald V. Fraser, Katy president, has sent stockholders a letter outlining the results of a meeting between representatives of common and preferred stockholder groups. The letter listed 13 basic principles agreed upon by the stockholder groups that would govern drafting a plan for recapitalizing the Katy. Preferred and common stockholder groups, Mr. Fraser's letter said, will name committees to work out details of a recapitalization plan, and the road's management will cooperate fully with the committees.

Mr. Fraser, speaking at a luncheon of businessmen at the Statler Hotel, New York, on November 5, after the first meeting of the road's directors to

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 126 reports (Form IBS) representing 130 steam railways

(Switching and Terminal Companies Not Included)

Income Items	United States: For the month of August 1953	For the month of August 1952	For the eight months of 1953	For the eight months of 1952
1. Net railway operating income	$101,635,603	$105,227,432	$744,916,279	$613,069,834
2. Other income	20,806,097	16,843,623	149,474,809	141,182,248
Total income	122,441,700	122,071,055	894,391,088	754,252,082
4. Miscellaneous deductions from income	3,997,753	4,460,016	31,497,954	32,436,947
5. Income available for fixed charges	118,443,947	117,611,039	862,893,134	721,815,135
6. Fixed charges:				
6-01. Rent for leased roads and equipment	6,231,686	6,268,153	49,778,545	51,576,292
6-02. Interest deductions[1]	27,140,422	26,857,426	217,269,892	211,910,339
6-03. Amortization of discount on funded debt	241,910	268,170	2,001,280	1,990,308
6-04. Total fixed charges	33,614,018	33,393,749	269,049,717	265,476,939
7. Income after fixed charges	84,829,929	84,217,290	593,843,417	456,338,196
8. Other deductions	3,303,505	3,026,823	23,067,560	23,702,802
9. Net income	81,526,424	81,190,467	570,775,857	432,635,394
10. Depreciation (Way and structures and Equipment)	42,255,336	41,047,320	333,191,149	319,600,016
11. Federal income taxes	56,624,106	58,890,251	424,380,912	347,788,525
12. Dividend appropriations:				
12-01. On common stock	29,281,127	26,690,526	173,739,132	146,988,743
12-02. On preferred stock	4,802,527	4,511,274	54,625,463	50,710,281
Ratio of income to fixed charges (Item 5 ÷6—04)	3.52	3.52	3.21	2.72

Selected Expenditures and Asset Items	United States: Balance at end of August 1953	Balance at end of August 1952
17. Expenditures (gross) for additions and betterments—Road	$249,557,261	$243,529,594
18. Expenditures (gross) for additions and betterments—Equipment	589,642,353	655,532,645
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	461,723,353	488,689,319
20. Other unadjusted debits	94,543,769	88,217,326
21. Cash	902,085,591	838,474,493
22. Temporary cash investments	1,002,768,841	881,077,053
23. Special deposits	69,892,103	70,268,018
24. Loans and bills receivable	617,460	871,272
25. Traffic and car-service balances—Dr.	65,027,444	66,911,085
26. Net balance receivable from agents and conductors	182,300,397	175,704,384
27. Miscellaneous accounts receivable	361,736,522	365,330,999
28. Materials and supplies	831,514,674	879,232,817
29. Interest and dividends receivable	16,499,800	14,405,664
30. Accrued accounts receivable	242,189,740	221,634,701
31. Other current assets	37,448,271	36,244,446
32. Total current assets (items 21 to 31)	3,712,080,843	3,550,154,932
Selected Liability Items		
40. Funded debt maturing within 6 months[2]	$165,201,117	$230,378,354
41. Loans and bills payable[3]	2,751,950	7,317,624
42. Traffic and car-service balances—Cr.	110,089,777	99,757,212
43. Audited accounts and wages payable	515,108,266	522,610,199
44. Miscellaneous accounts payable	209,767,664	203,801,275
45. Interest matured unpaid	22,401,681	23,266,197
46. Dividends matured unpaid	11,169,275	10,669,679
47. Unmatured interest accrued	83,209,087	86,215,610
48. Unmatured dividends declared	52,786,270	46,646,972
49. Accrued accounts payable	229,264,073	213,946,577
50. Taxes accrued	894,340,712	862,117,920
51. Other current liabilities	93,267,662	103,411,808
52. Total current liabilities (items 41 to 51)	2,224,156,417	2,179,761,073
53. Analysis of taxes accrued:		
53-01. U. S. Government taxes	666,059,159	635,829,953
53-02. Other than U. S. Government taxes	228,281,553	226,287,967
54. Other unadjusted credits	280,656,584	266,714,150

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
Subject to revision.

Another great railroad adopts reflectorization program

SEABOARD AIR LINE RAILROAD — THROUGH THE HEART OF THE SOUTH

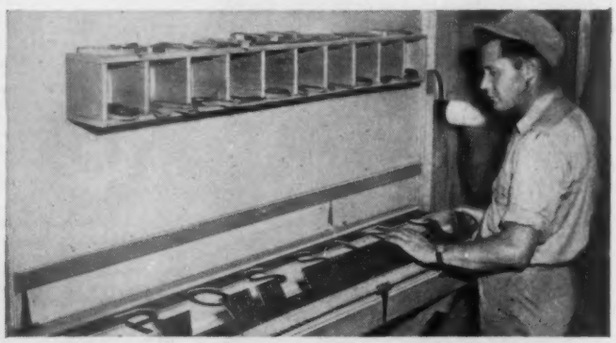
Crossbucks and speed signs of "Scotchlite" Sheeting manufactured in road's own sign shop

SO SUCCESSFUL was the Seaboard Airline's South Carolina crossbuck-reflectorization program, that it now has spread to every state served by the railroad. Speed boards, too, are also reflectorized by this safety and public relations conscious road.

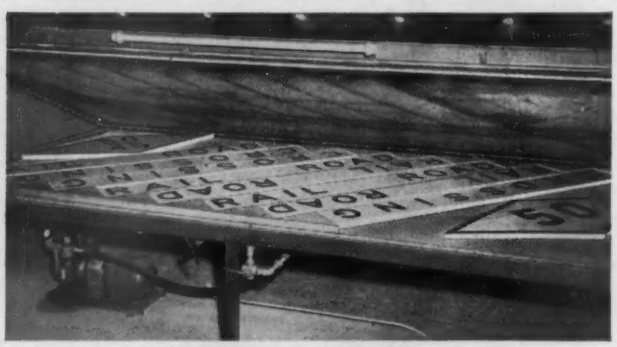
Chosen for this important job was "Scotchlite" Sheeting . . . the brilliant reflective material that makes long-lasting, low cost signs . . . actually exceeds AAR signal section specifications.

By gearing its sign shop to the mechanized manufacturing of these signs and signals of "Scotchlite" Sheeting, the Seaboard Airline kept production costs to a minimum. Your sign shop can do the same. Get full details with the coupon below. There's no obligation, of course.

IMPORTANT NIGHTTIME VISIBILITY for signs and signals is provided by "Scotchlite" Reflective Sheeting. At night they are visible at half a mile. Remain in perfect condition for years.



PRE-CUT LETTERS are here positioned and affixed to a background of "Scotchlite" Sheeting. Hand-made pattern shown here saves valuable production time, makes letter-placement easy.



ONE MAN-OPERATED vacuum applicator bonds sheeting to sign surfaces in just six minutes. Applicator is easy to use, requires no special skills or long training. Pays for itself in stepped-up production.

SCOTCHLITE
REFLECTIVE SHEETING

Minnesota Mining & Mfg. Co.
Dept. RA-113, St. Paul 6, Minn.

Send me additional information on sign and signal reflectorization.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

Made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.— also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ont., Can.

3M COMPANY

be held in that city in eight years, said current readjustments in many areas of the nation's economy should not be misinterpreted as the beginning of a major slump. The railroad officer warned there was danger the country might talk itself into a depression which, except for that psychological factor, "just wasn't in the making." He said that if such "alarmist talk" was kept to a minimum, the present period of readjustment would run its course without grave danger to the national economy.

Sacramento Northern.—*Trackage Rights.*—The I.C.C. has deferred action on this road's application for authority to use a 5,248-foot segment of Western Pacific trackage at Globe, Cal. The SN proposed to abandon a segment of its own line, construct connecting tracks, and use the WP's trackage. The road argued that the I.C.C. need pass only on the trackage-rights agreement. Division 4 ruled, however, that commission approval was also required for the abandonment and construction. It withheld approval of the trackage-rights agreement pending the filing of an application on these points.

Southern.—*Trackage Rights.*—This road has asked the I.C.C. to approve revision of an agreement covering Atlanta & Charlotte Air Line trackage between Charlotte, N.C., and Atlanta, Ga. The change, effective as of January 1, 1953, would increase rental payments made by the Southern. The Southern has used this 254-mile line since 1881, and a higher rental is part of a plan for modernizing the property.

Terminal Railroad Association of St. Louis.—*Acquisition.*—Division 4 of the I.C.C. has authorized this association to acquire direct ownership of facilities now held by six wholly owned subsidiaries. The subsidiary companies will be dissolved, simplifying the association's corporate structure and resulting in savings in taxes and other expenses (*Railway Age*, September 21, page 113).

Securities

Application

SOUTHERN PACIFIC.—To assume liability for $5,925,000 of series LL equipment trust certificates, to finance in part 1,108 new freight cars costing an estimated $7,919,306.

	Description and Builder	Estimated Unit Cost
10	70-ton gondola cars (Texas & New Orleans shops)	$10,468
127	70-ton tight-bottom drop-end gondola cars (American Car & Foundry Co.)	6,965
105	70-ton open hopper ballast cars (Pullman-Standard Car Manufacturing Company)	7,012
250	70-ton open hopper cars (Bethlehem Steel Company)	6,323
50	70-ton covered hopper cars (Pullman-Standard)	9,019
128	70-ton covered hopper cars (Pullman-Standard)	7,641

216 50-ton drop-bottom gondola cars (Southern Pacific Equipment Company) 7,065
222 70-ton flat cars (SP Equipment Company) 7,270

The certificates, to be dated November 1, would mature in 15 annual installments of $395,000 each, beginning November 1, 1954. They would be sold by competitive bidding, with interest rate to be set by such bids.

Dividends Declared

ALBANY & VERMONT.—$1, semiannual, payable November 16 to holders of record November 2.

CHICAGO, ROCK ISLAND & PACIFIC.—common, $1.25, quarterly; preferred A, $1.25, quarterly, both payable December 31 to holders of record December 14.

KANSAS CITY SOUTHERN.—75¢, quarterly, increased, payable December 15 to holders of record November 30.

MISSOURI-KANSAS-TEXAS.—7% preferred, $2.25, accumulative, payable January 4 to holders of record December 16.

NORFOLK SOUTHERN.—42½¢, quarterly, payable December 15 to holders of record December 1.

NORTH PENNSYLVANIA.—$1, quarterly, payable November 25 to holders of record November 18.

PITTSBURGH & WEST VIRGINIA.—50¢, quarterly, payable December 15 to holders of record November 20.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75, quarterly, payable December 1 to holders of record November 20.

WEST JERSEY & SEASHORE.—6% guaranteed, $1.50, semiannual, payable December 1 to holders of record November 16.

Security Price Averages

	Nov. 10	Prev. Week	Last Year
Average price of 20 representative railway stocks	59.80	59.72	64.18
Average price of 20 representative railway bonds	91.25	91.21	93.22

Railway Officers

R. N. Shields Heads P&WV

Succeeds Charles J. Graham, who becomes chairman of board after 15 years as president

Charles J. Graham, president of the Pittsburgh & West Virginia, at Pittsburgh, Pa., has been elected chairman of the board, and Richard N. Shields, executive vice-president, has been named president, as reported in *Railway Age*, November 9.

Mr. Graham was born at Pittsburgh March 13, 1878, and entered the bolt and nut business January 6, 1896, with John Charles & Co. When the latter company became the Graham Nut Company, Mr. Graham became a partner, and when it was incorporated in 1904, he became vice-president. He retained his vice-presidency in 1922, when the company's name was changed to Graham Bolt & Nut Co., and in 1929 when the company was absorbed by the Pittsburgh Screw & Bolt Corp. From 1924 to 1931 he was president of the Bolt, Nut & Rivet Manufacturers' Association. He became associated with the Pressed Steel Car Company in 1933, during a period of reorganization, and upon completion of that reorganization in 1936 became a vice-president, which position he held until September 15, 1938, when he was elected to the presidency of the P&WV.

Charles J. Graham

Mr. Shields was born in Pittsburgh 51 years ago and started his career with the Carnegie Steel Company in 1920, rising to supervisor of the Transport division. In 1942 he was appointed assistant traffic manager of the Pittsburgh district of United States Steel subsidiary companies. He became assistant general traffic manager of the Pittsburgh Steel Company in 1948 and in 1949 was appointed general traffic manager. Mr. Shields left the latter position to become executive vice-president of the P&WV November 1, 1952. He also has been president of the Monessen Southwestern, a Pittsburgh Steel subsidiary, since 1950.

Richard N. Shields

BOSTON & MAINE.—**R. M. Edgar,** vice-president, has assumed jurisdiction over all passenger matters, and **A. S. Baker,** executive assistant to president, has assumed jurisdiction over all publicity and public relations matters.

BURLINGTON. — Richard W. Coglan, assistant to treasurer, has been elected treasurer and assistant secretary, succeeding **Bert Vickery,** who retired October 31. Mr. Coglan also succeeds Mr. Vickery as assistant treasurer and assistant secretary of the Colorado & Southern. Mr. Coglan joined the Burlington in 1907, and after holding positions in the auditing and treasury departments, became assistant to treasurer in 1942.

Richard W. Coglan

E. L. Potarf, general manager at Omaha, has been appointed general manager—Lines East of the Missouri river, at Chicago, succeeding **H. E. Hinshaw,** who is retiring because of ill health. Named as general manager—Lines West of the Missouri river, at Omaha, is **E. P. Stine,** assistant to vice-president at Chicago. **J. C. Grisinger,** division superintendent at McCook, Neb., has been promoted to general superintendent at Lincoln, Neb., succeeding **Leon L. Smith,** who died recently.

CANADIAN PACIFIC.—**R. F. P. Bowman,** assistant superintendent of the Medicine Hat (Alta.) division, has been named acting superintendent of that division, replacing **George Meldrum,** who has been assigned to special duties in Montreal.

CHESAPEAKE & OHIO.—**D. S. Garda,** transportation inspector, Western general division, at Huntington, W. Va., has been appointed assistant to director of labor relations at Richmond, Va.

CHICAGO & ILLINOIS MIDLAND.—**J. R. Mosteika,** general agent at St. Louis, has been named general freight agent at Springfield,

Ill., succeeding **F. W. Paris,** who retired November 2.

CHICAGO & NORTH WESTERN. — Henry C. Sengfelder, formerly manager of the Hotel Sherman catering service at Chicago, has been named manager of dining car service there.

COTTON BELT.—F. L. Barnes has been appointed general freight agent at St. Louis. The position of assistant general freight and passenger agent, heretofore held by Mr. Barnes, has been abolished.

DENVER & RIO GRANDE WESTERN. — John H. Tanner, manager of mail, baggage and express traffic at Denver, has been appointed assistant passenger traffic manager at that point, while continuing his present duties.

FORT WORTH & DENVER. — R. W. Coglan has been appointed assistant treasurer and assistant secretary at Forth Worth, Tex., succeeding **Bert Vickery,** who has retired.

FRISCO.—Roy J. Doelling, office manager at St. Louis, has been named executive assistant at that point, while

Roy J. Doelling

Martin M. Pomphrey, secretary to vice president-operations, has been appointed to succeed him.

GREAT NORTHERN — NORTHERN PACIFIC. — Charles A. Manthe, superintendent at King Street Station, owned and operated jointly by the GN and the NP, at Seattle, Wash., retired October 31, and has been succeeded by **Val E. Hill,** assistant superintendent there. **A. W. Foote,** chief clerk in the office of general superintendent of transportation of the GN at St. Paul, replaces Mr. Hill.

LOUISIANA & ARKANSAS.—R. J. Blair, trainmaster at Minden, La., has been appointed superintendent at Shreveport, La., succeeding **R. D. Fretwell,** who has been named general

superintendent of the Milwaukee-Kansas City Southern Joint Agency at Kansas City, replacing **J. T. McCorkle,** who has retired.

MILWAUKEE. — F. H. Ryan, trainmaster at Deer Lodge, Mont., has been appointed assistant division superintendent at Beloit, Wis., succeeding **J. O. Willard,** who has been assigned to other duties. Named to replace Mr. Ryan is **R. H. Jensen,** who transfers from Austin, Minn., and in turn has been succeeded by **G. W. Mealey,** special representative to assistant vice-president at Chicago. **E. A. Duszak,** trainmaster at Sioux City, Iowa, has been transferred to Milwaukee, succeeding **R. R. Balsbaugh,** who has resigned. **Paul Bridenstine,** trainmaster at Miles City, Mont., has been transferred to succeed Mr. Duszak. Named as terminal trainmaster at Milwaukee is **N. J. Klein,** trainmaster at Marion, Iowa, who succeeds **J. F. Elder,** who has been transferred to Davenport to replace **B. J. McCanna** as trainmaster. Mr. McCanna has been transferred to Minneapolis to succeed **D. P. Valentine,** who has been transferred to Marion to replace Mr. Klein.

Frank A. Shoulty, assistant superintendent car department, at Milwaukee, has been promoted to superintendent car department there, succeeding **J. A. Deppe,** retired (*Railway Age*, October 26).

Frank A. Shoulty

Raymond E. Stuckey, telegraph foreman, has been named general supervisor—signals and communications at Milwaukee, succeeding **J. A. Henry,** who has retired (*Railway Age*, October 26).

NASHVILLE, CHATTANOOGA & ST. LOUIS.—G. W. Sloan, senior assistant general freight agent at Nashville, Tenn., retired November 1. Named as assistant general freight agent there is **S. M. Dickerson,** assistant to freight traffic manager at that point.

E. I. Bowman, assistant general freight agent—rates at Nashville, Tenn., has been named assistant general freight agent—divisions, succeeding **G. W. Sloan,** retired.

NEW YORK CENTRAL.—T. E. Kiefaber has been appointed assistant to general freight traffic manager at New York.

NICKEL PLATE.—Kenneth B. Chilcot has been appointed general agent at Buffalo.

PACIFIC ELECTRIC.—William G. Knoche, freight traffic manager at Los Angeles, retired October 26.

Harold C. Kuck, assistant to freight traffic manager, has been promoted to head the freight traffic department, with the title of general freight agent. **R. L. McMichael,** chief clerk, rates and divisions, has been named assistant general freight agent in charge of rates and divisions; **William L. Waite, Jr.,** office manager, has been appointed assistant general freight agent in charge of solicitation and service; and **E. W. Hanlon,** assistant freight claim agent, has been named freight claim agent. All will be headquartered at Los Angeles.

PENNSYLVANIA. — Hugh J. Ward, deputy comptroller, has been

appointed comptroller, with headquarters as before at Philadelphia, succeeding **Elmer Hart,** retired (*Railway Age*, November 2). **R. G. Gilmore,** assistant to comptroller, has been named assistant comptroller.

Hugh J. Ward

D. M. Confer, accountant and **G. G. Degnan,** tax analyst, have been appointed assistants to comptroller. Mr. Ward was born at Philadelphia December 6, 1901, and joined the PRR in 1918 as a junior clerk. He became deputy comptroller in 1943.

William C. Antoine, assistant general solicitor, has been advanced to assistant general counsel at Philadelphia.

Russell W. Talbot, general freight agent at Philadelphia, has been appointed assistant to general traffic manager there, succeeding **O. C. Grimshaw,** who resigned to become vice-president—traffic of the Detroit, Toledo & Ironton (*Railway Age*, October 12). **Robert W. Leedy,** assistant general freight agent, has been named general freight agent of the Eastern region at Philadelphia, succeeding **John D. Finley,** who replaces Mr. Talbot. **Ernest L. Wogen,** district freight agent at Chicago, has assumed Mr. Leedy's duties as assistant general freight agent at Philadelphia. **W. S. Wilson, Jr.,** division freight agent at Columbus, Ohio, has been transferred to Philadelphia, succeeding **George A. Shaffer,** who has been transferred to Baltimore. **Arthur J. Vonk,** assistant industrial agent, has been named industrial agent at Philadelphia, succeeding **H. C. Millman,** who has been appointed industrial agent at Pittsburgh, replacing the late **J. V. Davis. William K. Chapman,** assistant general freight agent at Pittsburgh, has been named western freight traffic manager at Chicago, succeeding the late **A. S. Jennings. William M. Hardt, II,** division freight agent at Baltimore, succeeds Mr. Chapman as assistant general freight agent at Pittsburgh.

PITTSBURG & SHAWMUT.—E. L. Frazier, Jr., superintendent of motive power and equipment at Brookville, Pa., having reached the age of retirement, has asked to be relieved of the duties of his present position. He has been appointed mechanical assistant to president at Brookville.

RAILWAY EXPRESS AGENCY.—Warren L. Serenbetz has been appointed chief engineer at New York, succeeding **C. Gilbert Peterson,** who retired November 1, after 19 years of service.

READING TRANSPORTATION COMPANY.—C. W. Piening, assistant manager, has been named manager, succeeding **E. D. Osterhout,** retired.

WESTERN WEIGHING & INSPECTION BUREAU.—E. H. Suess has been appointed district manager at Minneapolis, succeeding **O. E. Johnson,** who has retired.

OBITUARY

Randall F. Holden, 60, engineer maintenance of way of the **Carolina & Northwestern** (Southern subsidiary), at Charlotte, N. C., died November 4 while on a business trip in Greenville, S. C.

Freight Operating Statistics of Large Railways — Selected Items

	Region, Road and Year	Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl.locos. & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine.....1953	1,668	254,003	259,332	9,846	9,781	71.1	596,492	249,679	80	3	9	9.8
	1952	1,690	245,876	252,620	11,957	9,400	71.4	584,031	252,557	77	10	10	10.3
	N.Y., N. H. & Htfd.....1953	1,748	296,975	297,060	15,676	12,800	71.1	767,822	327,547	91	..	3	3.2
	1952	1,765	284,659	284,818	15,156	10,913	69.3	701,123	317,003	99	..	1	1.0
Great Lakes Region	Delaware & Hudson.....1953	793	211,922	217,471	10,593	10,407	72.7	708,652	380,928	50	..	..	..
	1952	793	228,542	256,778	13,522	10,722	73.0	738,072	398,737	83	38	15	11.0
	Del., Lack. & Western.....1953	962	272,966	288,658	22,318	12,687	70.9	814,069	367,877	66	..	..	..
	1952	962	268,516	282,235	22,178	12,853	73.5	825,118	391,391	74	5	3	3.7
	Erie.....1953	2,237	625,880	630,096	30,522	35,125	69.6	2,189,610	890,289	165	..	4	2.4
	1952	2,242	609,017	618,176	35,847	35,740	69.8	2,217,162	915,575	170	4	3	1.7
	Grand Trunk Western.....1953	952	277,182	282,592	2,424	8,408	61.2	590,183	250,184	65	6	10	12.3
	1952	952	233,885	241,767	2,268	8,270	65.6	555,402	243,722	55	..	13	19.1
	Lehigh Valley.....1953	1,151	234,150	237,932	7,654	11,521	68.1	784,865	371,770	33	..	1	2.9
	1952	1,206	226,579	230,198	11,361	13,417	79.7	783,954	389,091	31	3	..	..
	New York Central.....1953	10,667	2,693,207	2,761,533	103,020	107,909	62.2	7,724,020	3,507,517	701	58	182	19.3
	1952	10,668	2,639,946	2,715,835	117,488	104,259	64.6	7,340,212	3,411,804	752	140	229	20.4
	New York, Chic. & St. L.....1953	2,161	814,607	843,597	8,811	31,909	67.5	2,224,553	1,026,481	206	11	39	15.2
	1952	2,160	757,151	780,309	8,725	30,363	69.4	2,094,878	979,991	187	13	50	20.0
	Pitts. & Lake Erie.....1953	221	79,526	81,204	....	3,635	68.5	307,669	190,999	25	6	4	11.4
	1952	221	77,509	78,505	85	3,694	73.8	308,139	197,949	31	5	14	28.0
	Wabash.....1953	2,381	571,837	575,824	7,276	25,122	67.1	1,614,996	644,023	103	16	26	17.9
	1952	2,381	492,417	497,154	8,440	21,862	70.6	1,391,244	595,054	108	30	36	20.7
Central Eastern Region	Baltimore & Ohio.....1953	6,081	1,706,952	1,901,735	194,358	71,812	64.2	5,428,765	2,705,454	489	30	118	18.5
	1952	6,082	1,588,503	1,783,604	184,646	68,156	66.5	5,128,058	2,607,455	532	59	168	22.1
	Bessemer & Lake Erie.....1953	213	56,867	62,223	291	3,234	61.8	383,062	250,895	18	25	..	..
	1952	212	72,337	77,706	283	3,850	60.3	490,054	322,879	25	15	12	23.1
	Central of New Jersey.....1953	617	126,013	131,005	9,734	5,006	70.9	364,638	194,288	68	7	7	8.5
	1952	618	133,360	138,914	12,742	5,485	68.7	401,256	213,255	55	4	5	7.8
	Chicago & Eastern Ill.....1953	868	125,582	125,582	2,796	5,242	67.8	350,325	169,550	27	..	2	6.9
	1952	868	126,547	126,547	2,707	5,144	72.4	332,422	165,787	27	..	3	10.0
	Elgin, Joliet & Eastern.....1953	236	99,431	99,963	14	3,203	64.6	255,042	138,512	40	..	1	2.4
	1952	236	87,094	88,151	602	3,413	70.4	266,626	152,195	41	..	1	2.4
	Pennsylvania System.....1953	9,939	3,258,457	3,476,729	301,261	137,546	65.7	9,978,141	4,903,187	1,053	130	307	20.6
	1952	9,961	2,875,194	3,100,011	306,956	130,699	68.1	9,265,560	4,639,572	1,017	93	374	25.2
	Reading.....1953	1,309	357,202	362,088	14,027	13,979	65.7	1,083,073	580,593	170	23	19	9.0
	1952	1,318	336,857	343,377	19,725	13,702	65.8	1,067,809	579,918	187	15	33	14.0
	Western Maryland.....1953	831	177,719	195,407	15,210	6,905	65.2	565,591	322,146	85	29	3	2.6
	1952	836	174,581	199,857	23,562	6,117	66.2	490,435	278,748	119	17	12	8.1
Pocahontas Region	Chesapeake & Ohio.....1953	5,034	1,361,570	1,394,559	38,092	63,592	58.6	5,472,154	3,050,520	416	41	155	25.3
	1952	5,036	1,242,375	1,279,804	39,844	59,582	58.3	5,064,691	2,844,966	417	72	178	26.7
	Norfolk & Western.....1953	2,113	723,138	762,589	55,395	34,962	59.3	3,153,131	1,722,490	222	26	21	7.8
	1952	2,113	648,886	687,177	47,477	31,037	61.5	2,690,377	1,478,734	217	38	22	7.9
Southern Region	Atlantic Coast Line.....1953	5,367	709,106	709,115	7,880	22,251	63.0	1,568,600	734,182	243	..	5	2.0
	1952	5,460	765,000	765,216	8,099	23,852	62.6	1,719,134	819,927	268	16	32	10.1
	Central of Georgia.....1953	1,754	199,274	199,326	2,391	7,417	68.6	502,055	238,288	71	..	1	1.4
	1952	1,754	199,948	205,641	2,804	7,390	69.2	492,725	230,904	97	11	1	.9
	Gulf, Mobile & Ohio.....1953	2,718	318,551	318,551	213	16,876	71.1	1,117,035	542,117	84	..	5	5.6
	1952	2,718	321,922	321,922	178	17,119	73.0	1,125,770	560,317	87	..	2	2.2
	Illinois Central.....1953	6,538	1,418,114	1,421,232	49,222	52,038	63.1	3,771,791	1,749,606	529	64	70	10.6
	1952	6,539	1,483,887	1,487,491	50,036	52,762	64.3	3,798,006	1,785,405	526	40	80	12.4
	Louisville & Nashville.....1953	4,728	975,807	1,034,676	22,021	35,674	63.6	2,651,549	1,359,079	239	73	31	9.0
	1952	4,756	933,371	978,004	22,707	33,744	64.3	2,457,074	1,248,628	229	82	54	14.8
	Nash., Chatt. & St. Louis.....1953	1,032	187,770	192,644	4,321	6,567	71.3	433,135	208,926	48	..	4	7.7
	1952	1,032	195,458	198,756	3,152	6,423	73.9	412,936	201,121	49	8	5	8.1
	Seaboard Air Line.....1953	4,068	554,925	554,925	642	21,712	64.6	1,537,251	711,824	133	14	10	6.4
	1952	4,135	564,014	564,014	1,204	21,937	65.1	1,530,468	711,668	135	72	6	2.8
	Southern.....1953	6,263	973,029	973,069	12,079	40,731	71.0	2,576,728	1,196,878	236	5	4	1.6
	1952	6,264	1,058,725	1,058,800	12,909	40,449	71.6	2,536,779	1,177,329	301	62	65	15.2
Northwestern Region	Chicago & North Western.....1953	7,849	809,834	812,548	14,241	34,945	66.1	2,483,548	1,083,295	239	31	87	24.4
	1952	7,872	921,288	931,089	19,800	37,570	66.8	2,693,293	1,164,670	322	5	107	24.7
	Chicago Great Western.....1953	1,435	140,670	140,788	827	8,788	71.2	587,747	279,121	32	..	2	5.9
	1952	1,441	155,355	155,355	3,442	9,584	71.4	650,447	313,882	34	..	1	2.9
	Chic., Milw., St. P. & Pac.....1953	10,662	1,151,803	1,177,188	35,448	48,964	64.9	3,392,969	1,535,906	363	32	38	8.8
	1952	10,663	1,266,265	1,308,676	45,410	52,141	63.6	3,665,610	1,670,251	427	39	69	12.9
	Chic., St. P., Minn. & Omaha..1953	1,606	176,433	179,438	7,115	5,805	68.3	402,868	188,932	68	5	29	28.4
	1952	1,606	205,552	210,670	8,656	6,476	70.8	442,828	208,790	68	..	31	31.3
	Duluth, Missabe & Iron Range.1953	567	224,741	225,987	1,664	10,515	51.1	1,087,815	666,001	61	..	4	6.2
	1952	569	225,064	226,565	2,254	10,012	50.0	1,071,770	650,907	77	..	8	9.4
	Great Northern.....1953	8,291	1,251,788	1,256,335	39,671	51,143	62.7	4,046,750	2,054,827	320	107	33	7.2
	1952	8,181	1,276,550	1,282,210	47,309	52,559	62.1	4,142,946	2,118,044	352	112	46	9.0
	Minneap., St. P. & S. S. M.....1953	4,172	411,697	417,171	6,240	14,324	65.1	989,072	473,937	109	..	9	7.6
	1952	4,172	443,611	450,610	4,444	15,953	65.4	1,125,361	554,755	115	..	4	3.4
	Northern Pacific.....1953	6,583	947,378	980,901	37,987	38,059	65.0	2,759,150	1,258,089	330	11	59	14.8
	1952	6,585	989,891	1,022,698	44,752	41,679	64.9	2,936,254	1,340,111	333	8	59	14.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.).1953	13,095	2,522,753	2,600,215	82,763	107,713	66.2	7,259,520	2,872,962	558	103	64	8.8
	1952	13,072	2,385,237	2,488,655	99,899	99,906	66.7	6,623,997	2,640,620	588	56	103	13.8
	Chic., Burl. & Quincy.....1953	8,833	1,262,715	1,269,456	41,369	53,240	67.4	3,536,020	1,597,851	319	31	75	17.6
	1952	8,773	1,252,275	1,263,617	47,839	53,090	67.1	3,551,900	1,611,576	335	27	99	21.5
	Chic., Rock I. & Pac.....1953	7,861	948,347	945,179	5,106	35,454	66.5	2,476,767	1,118,135	169	2	11	6.0
	1952	7,902	958,523	967,096	7,900	35,290	66.0	2,482,899	1,107,660	187	39	39	14.7
	Denver & R. G. Wn.....1953	2,313	357,373	387,644	39,324	16,766	69.9	1,171,431	550,605	103	27	24	15.6
	1952	2,333	432,189	473,450	52,818	19,749	72.3	1,317,396	597,094	105	24	27	17.3
	Southern Pacific.....1953	8,058	2,384,946	2,526,583	325,305	104,672	63.8	7,228,892	2,897,734	719	23	132	15.1
	1952	8,059	2,485,104	2,631,852	304,494	106,185	63.4	7,414,111	2,978,928	699	4	157	18.3
	Union Pacific.....1953	9,824	3,058,229	3,155,251	200,620	122,373	63.5	8,452,944	3,463,356	640	56	135	16.2
	1952	9,843	2,978,307	3,099,560	200,855	120,753	64.3	8,326,552	3,445,274	632	21	143	18.0
	Western Pacific.....1953	1,190	260,235	267,330	17,356	12,494	70.9	816,291	378,264	41	12	3	5.4
	1952	1,190	293,609	300,509	19,603	14,810	69.4	928,455	399,120	38	9	3	6.0
Southwestern Region	International-Gt. Northern*....1953	1,104	160,166	160,166	....	5,806	64.7	416,618	195,475	50	..	3	5.7
	1952	1,104	167,190	167,190	59	5,998	67.7	469,847	211,153	46	8	7	11.5
	Kansas City Southern.....1953	886	168,592	168,614	192	9,032	66.2	643,818	301,590	24	..	1	4.0
	1952	886	167,390	167,390	71	9,034	70.5	617,243	297,678	26	5	7	18.4
	Mo.-Kans.-Texas Lines.....1953	3,230	378,212	378,212	3,871	14,674	65.5	957,331	418,432	88	7	..	..
	1952	3,230	391,201	391,201	4,487	15,002	67.5	951,521	416,206	89	10	8	7.5
	Missouri Pacific*.....1953	6,917	1,225,369	1,229,240	15,084	47,168	66.0	3,207,341	1,438,151	309	24	65	16.3
	1952	6,933	1,233,763	1,237,855	17,038	47,364	67.5	3,238,160	1,458,392	295	36	60	15.3
	Texas & Pacific.....1953	1,831	311,679	311,679	3,857	14,337	67.2	948,703	382,621	60	..	..	..
	1952	1,832	323,244	323,244	4,373	13,373	63.8	931,650	370,229	63	7	6	7.9
	St. Louis-San Francisco.....1953	4,564	625,269	625,277	5,995	24,200	66.1	1,636,555	736,156	189	..	3	1.6
	1952	4,567	637,144	637,144	6,135	24,710	64.8	1,689,527	752,775	184	15	25	11.2
	St. Louis Southw. Lines.....1953	1,561	307,583	307,6[illegible]	4,142	14,391	72.8	877,088	392,071	60	25	2	2.3
	1952	1,562	331,351	331,5[illegible]	4,504	14,025	75.7	839,470	375,255	58	16	13	14.9
	Texas & New Orleans.....1953	4,279	743,391	743,391	8,090	27,396	63.8	1,914,570	824,290	183	..	33	15.3
	1952	4,280	765,469	766,069	22,747	28,057	64.5	1,935,557	834,830	215	..	33	13.3

For the Month of August 1953 Compared with August 1952

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1953	1,604	7,965	9,569	2.3	38,008	2,353	985	25.5	867	47.8	4,829	16.2	106.7
		1952	1,326	7,711	9,037	3.3	38,491	2,379	1,029	26.9	922	48.0	4,821	16.2	93.2
	N. Y., N. H. & Htfd	1953	2,008	15,227	17,235	2.6	40,265	2,585	1,103	25.6	654	35.9	6,045	15.6	130.2
		1952	1,425	13,901	15,326	3.6	35,530	2,465	1,114	29.0	692	34.4	5,794	14.4	111.6
Great Lakes Region	Delaware & Hudson	1953	4,027	5,100	9,127	7.2	62,026	3,361	1,807	36.6	1,258	47.3	15,496	18.5	165.9
		1952	5,030	5,243	10,273	3.4	60,182	3,247	1,754	37.2	1,175	43.3	16,220	18.6	72.2
	Del., Lack. & Western	1953	5,982	10,288	16,270	4.4	50,696	3,035	1,371	29.0	734	35.7	12,336	17.0	170.9
		1952	4,435	11,226	15,661	5.1	50,016	3,117	1,479	30.5	865	38.7	13,124	16.3	137.7
	Erie	1953	7,324	20,256	27,580	3.3	63,700	3,538	1,439	25.3	1,028	58.3	12,858	18.2	138.4
		1952	7,593	21,133	28,726	3.5	64,610	3,680	1,519	25.6	1,060	59.2	13,173	17.7	133.7
	Grand Trunk Western	1953	3,459	9,454	12,913	4.7	43,656	2,150	912	29.8	638	35.0	8,477	20.5	125.4
		1952	3,455	9,736	13,191	4.5	45,761	2,393	1,050	29.5	602	31.1	8,258	19.3	129.3
	Lehigh Valley	1953	5,821	10,583	16,404	4.9	64,365	3,414	1,617	32.3	732	33.3	10,419	19.2	249.9
		1952	4,643	8,085	12,728	6.7	62,481	3,525	1,750	29.0	1,012	43.8	10,407	18.1	237.2
	New York Central	1953	68,498	97,862	166,360	9.5	49,173	2,913	1,323	32.5	695	34.3	10,607	17.1	110.2
		1952	72,781	97,608	170,389	8.6	46,727	2,827	1,314	32.7	699	33.1	10,317	16.8	91.6
	New York, Chic. & St. L.	1953	7,186	19,859	27,045	5.9	49,044	2,780	1,283	32.2	1,230	56.6	15,323	18.0	118.1
		1952	6,369	18,029	24,398	7.4	48,235	2,818	1,318	32.3	1,317	58.8	14,635	17.4	110.8
	Pitts. & Lake Erie	1953	3,259	9,727	12,986	8.4	58,304	3,873	2,404	52.5	499	13.9	27,879	15.1	80.1
		1952	5,629	10,872	16,501	6.1	57,921	3,985	2,560	53.6	462	11.7	28,893	14.6	55.6
	Wabash	1953	8,180	11,562	19,742	9.5	64,304	2,843	1,134	25.6	1,060	61.6	8,725	22.8	136.8
		1952	7,661	13,210	20,871	6.4	61,073	2,845	1,217	27.2	926	48.2	8,062	21.6	101.2
Central Eastern Region	Baltimore & Ohio	1953	51,701	51,361	103,062	5.3	47,197	3,232	1,611	37.7	841	34.8	14,352	14.8	112.1
		1952	53,404	44,227	97,631	8.4	46,065	3,269	1,662	38.3	858	33.7	13,830	14.3	87.6
	Bessemer & Lake Erie	1953	5,306	1,470	6,776	12.3	100,095	6,895	4,516	77.6	1,224	25.5	37,997	14.9	51.9
		1952	6,487	2,141	8,628	10.4	108,925	6,923	4,561	83.9	1,214	24.0	49,129	16.1	53.8
	Central of New Jersey	1953	3,562	9,811	13,373	9.6	37,967	3,032	1,616	38.8	468	17.0	10,158	13.1	76.0
		1952	2,325	10,602	12,927	9.5	39,681	3,170	1,685	38.9	510	19.1	11,131	13.2	99.4
	Chicago & Eastern Ill.	1953	2,345	3,529	5,874	7.7	45,029	2,817	1,363	32.3	860	39.2	6,301	16.1	155.0
		1952	2,399	3,180	5,579	4.2	43,318	2,635	1,314	32.2	940	40.3	6,161	16.5	156.4
	Elgin, Joliet & Eastern	1953	7,008	10,704	17,712	6.5	20,972	2,689	1,461	43.2	246	8.8	18,933	8.2	103.8
		1952	7,469	12,210	19,679	5.2	22,247	3,179	1,815	44.6	263	8.4	20,803	7.3	96.3
	Pennsylvania System	1953	104,280	99,297	203,577	7.5	51,801	3,162	1,554	35.6	777	33.2	15,914	16.9	88.9
		1952	102,624	102,257	204,881	10.6	51,155	3,308	1,657	35.5	733	30.3	15,025	15.9	79.8
	Reading	1953	14,516	18,828	33,344	6.1	42,549	3,041	1,630	41.5	570	20.9	14,308	14.0	69.1
		1952	13,051	18,227	31,278	6.7	41,222	3,171	1,722	42.3	577	20.7	14,193	13.0	60.6
	Western Maryland	1953	5,723	2,899	8,622	5.2	45,262	3,237	1,844	46.7	1,152	37.9	12,505	14.2	62.9
		1952	5,161	2,991	8,152	4.2	40,734	2,862	1,627	45.6	1,048	34.8	10,756	14.5	52.5
Pocahontas Region	Chesapeake & Ohio	1953	47,377	26,004	73,381	3.3	72,594	4,037	2,250	48.0	1,301	46.2	19,548	18.1	82.0
		1952	47,403	23,967	71,370	4.6	71,172	4,121	2,315	47.7	1,265	45.4	18,223	17.5	69.4
	Norfolk & Western	1953	29,854	8,030	37,884	2.1	76,214	4,449	2,430	49.3	1,438	49.2	26,296	17.5	107.5
		1952	32,060	7,345	39,405	2.1	70,994	4,213	2,316	47.6	1,152	39.3	22,575	17.1	92.3
Southern Region	Atlantic Coast Line	1953	15,814	14,873	30,687	2.3	38,146	2,224	1,041	33.0	749	36.0	4,413	17.2	103.9
		1952	15,452	16,296	31,748	3.0	37,578	2,256	1,076	34.4	850	39.5	4,844	16.7	87.7
	Central of Georgia	1953	2,628	5,564	8,192	3.1	44,473	2,532	1,202	32.1	961	43.6	4,382	17.7	100.8
		1952	2,573	6,032	8,605	5.2	41,433	2,475	1,160	31.2	891	41.2	4,247	16.8	73.2
	Gulf, Mobile & Ohio	1953	4,500	10,583	15,083	4.2	68,563	3,514	1,706	32.1	1,181	51.7	6,434	19.6	123.9
		1952	4,310	10,401	14,711	3.6	66,922	3,509	1,747	32.7	1,241	52.0	6,650	19.1	128.5
	Illinois Central	1953	25,963	26,409	52,372	3.0	46,138	2,699	1,252	33.6	1,104	52.0	8,632	17.3	76.6
		1952	28,884	27,516	56,400	2.4	43,639	2,598	1,221	33.8	1,033	47.5	8,808	17.0	82.4
	Louisville & Nashville	1953	31,086	14,290	45,376	4.2	45,777	2,726	1,397	38.1	940	38.8	9,273	16.8	106.4
		1952	32,380	14,136	46,516	5.2	42,741	2,636	1,340	37.0	837	35.2	8,469	16.2	97.7
	Nash., Chatt. & St. Louis	1953	2,173	5,237	7,410	2.8	43,154	2,313	1,115	31.8	965	42.5	6,531	18.7	130.4
		1952	1,591	5,302	6,893	3.5	40,091	2,116	1,031	31.3	953	41.2	6,286	19.0	114.8
	Seaboard Air Line	1953	11,383	12,751	24,134	2.0	49,693	2,801	1,297	32.8	959	45.3	5,645	17.9	133.2
		1952	10,543	12,634	23,177	2.6	49,094	2,747	1,277	32.4	1,008	47.8	5,552	18.1	98.7
	Southern	1953	17,012	27,725	44,737	3.0	45,714	2,663	1,237	29.4	872	41.8	6,165	17.3	139.1
		1952	15,462	28,605	44,067	3.2	40,972	2,409	1,118	29.1	905	43.4	6,063	17.1	87.5
Northwestern Region	Chicago & North Western	1953	21,772	31,945	53,717	5.3	50,868	3,165	1,381	31.0	655	32.0	4,452	16.6	80.5
		1952	21,020	34,865	55,885	3.7	46,043	3,065	1,326	31.0	656	31.7	4,773	15.7	77.2
	Chicago Great Western	1953	993	4,583	5,576	3.4	74,758	4,190	1,990	31.8	1,545	68.3	6,274	17.9	140.9
		1952	1,615	6,209	7,824	2.4	72,208	4,196	2,025	32.8	1,299	55.5	7,027	17.2	152.8
	Chic., Milw., St. P. & Pac.	1953	34,573	36,591	71,164	5.3	51,096	2,963	1,341	31.4	708	34.8	4,647	17.3	99.0
		1952	33,431	35,519	68,950	4.6	48,683	2,913	1,327	32.0	785	38.6	5,053	16.8	89.2
	Chic., St. P., Minn. & Omaha	1953	1,168	7,704	8,872	5.8	34,063	2,343	1,099	32.5	688	31.0	3,795	14.9	68.0
		1952	1,071	8,670	9,741	3.3	31,978	2,284	1,077	32.2	719	31.5	4,194	14.8	79.2
	Duluth, Missabe & Iron Range	1953	14,983	708	15,691	4.2	82,742	5,067	3,102	63.3	1,380	42.6	37,890	17.1	124.7
		1952	14,502	2,936	17,438	2.3	81,429	4,996	3,034	65.0	1,225	37.7	36,902	17.1	102.5
	Great Northern	1953	24,562	24,563	49,125	3.1	51,844	3,275	1,663	40.2	1,337	53.1	7,995	16.0	96.3
		1952	24,953	29,475	54,428	3.0	50,221	3,288	1,681	40.3	1,315	52.5	8,352	15.5	92.8
	Minneap., St. P. & S. S. M.	1953	6,780	9,756	16,536	5.2	45,708	2,423	1,161	33.1	991	46.0	3,664	19.0	126.4
		1952	7,173	9,165	16,338	5.3	45,674	2,547	1,256	34.8	1,098	48.3	4,289	18.0	134.8
	Northern Pacific	1953	21,401	19,152	40,553	6.0	51,906	2,935	1,338	33.1	1,021	47.5	6,165	17.8	89.7
		1952	20,631	18,994	39,625	5.0	49,930	2,992	1,365	32.2	1,108	53.1	6,565	16.8	93.3
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1953	49,970	33,178	83,148	3.1	64,655	2,892	1,145	26.7	1,095	62.0	7,077	22.5	125.8
		1952	50,947	34,458	85,405	3.6	59,744	2,789	1,112	26.4	992	56.2	6,516	21.5	118.7
	Chic., Burl. & Quincy	1953	21,077	22,504	43,581	2.7	54,584	2,810	1,270	30.0	1,174	58.1	5,835	19.5	106.0
		1952	19,986	23,619	43,605	3.0	55,948	2,844	1,290	30.4	1,178	57.8	5,926	19.7	97.6
	Chic., Rock I. & Pac.	1953	11,183	21,211	32,394	4.3	49,978	2,622	1,184	31.5	1,086	51.8	4,588	19.1	175.9
		1952	13,873	23,661	37,534	2.9	46,820	2,599	1,159	31.4	978	47.3	4,522	18.1	124.5
	Denver & R. G. Wn.	1953	7,213	8,530	15,743	3.3	59,098	3,287	1,545	32.8	1,130	49.2	7,679	18.0	96.5
		1952	7,140	9,904	17,044	3.0	55,439	3,061	1,387	30.2	1,156	52.9	8,256	18.2	111.9
	Southern Pacific	1953	30,523	42,776	73,299	2.5	51,810	3,062	1,227	27.7	1,239	70.2	11,600	17.1	115.2
		1952	29,834	49,908	79,742	2.8	50,074	3,025	1,215	28.1	1,250	70.3	11,924	16.8	120.6
	Union Pacific	1953	33,453	39,950	73,403	2.0	68,284	2,801	1,147	28.3	1,580	87.8	11,372	24.7	133.7
		1952	30,170	42,899	73,069	2.5	66,882	2,833	1,172	28.5	1,584	86.4	11,291	23.9	137.7
	Western Pacific	1953	2,285	3,813	6,098	6.1	76,525	3,151	1,460	30.3	1,921	89.5	10,254	24.4	167.9
		1952	2,416	4,045	6,461	5.7	69,506	3,207	1,378	26.9	1,844	98.6	10,819	22.0	203.6
Southwestern Region	International-Gt. Northern*	1953	814	5,969	6,783	3.6	50,745	2,609	1,224	33.7	942	43.3	5,712	19.5	103.0
		1952	1,030	7,302	8,332	2.6	54,601	2,822	1,268	35.2	817	34.3	6,170	19.4	88.4
	Kansas City Southern	1953	837	6,080	6,917	2.1	76,039	3,829	1,794	33.4	1,393	63.0	10,980	19.9	233.4
		1952	1,122	6,394	7,516	5.2	74,582	3,705	1,787	33.0	1,288	55.5	10,838	20.2	153.9
	Mo.-Kans.-Texas Lines	1953	3,779	7,149	10,928	4.5	53,611	2,536	1,109	28.5	1,251	67.0	4,179	21.2	140.1
		1952	3,673	6,238	9,911	7.4	49,055	2,436	1,066	27.7	1,308	69.8	4,157	20.2	127.8
	Missouri Pacific*	1953	16,997	16,809	33,806	3.8	57,278	2,628	1,178	30.5	1,324	65.8	6,707	21.9	107.9
		1952	19,998	16,618	36,616	3.1	55,786	2,639	1,188	30.8	1,270	61.1	6,787	21.3	110.3
	Texas & Pacific	1953	2,076	7,496	9,572	3.4	70,259	3,046	1,229	26.7	1,296	72.2	6,741	23.1	180.6
		1952	2,574	7,224	9,798	3.6	67,885	2,884	1,146	27.7	1,253	71.0	6,519	23.6	142.6
	St. Louis-San Francisco	1953	10,891	12,069	22,960	3.4	46,144	2,622	1,179	30.4	1,037	51.6	5,203	17.6	117.6
		1952	9,361	13,202	22,563	3.3	45,950	2,658	1,184	30.5	1,010	51.1	5,317	17.3	102.9
	St. Louis Southw. Lines	1953	2,428	4,808	7,236	1.6	57,349	2,854	1,276	27.2	1,740	87.7	8,102	20.1	123.8
		1952	2,101	5,391	7,492	1.8	53,208	2,536	1,134	26.8	1,668	82.4	7,750	21.0	124.7
	Texas & New Orleans	1953	5,585	16,731	22,316	1.4	50,560	2,594	1,117	30.1	1,270	66.2	6,214	19.6	118.5
		1952	5,551	18,678	24,229	2.7	48,820	2,548	1,099	29.8	1,195	62.2	6,292	19.3	108.6

*Report of trustees or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Current Publications

PAMPHLETS

DUE PROCESS ON THE RAILROADS: DISCIPLINARY GRIEVANCE PROCEDURES BEFORE THE NATIONAL RAILROAD ADJUSTMENT BOARD, FIRST DIVISION, by Joseph Lazar. 38 pages. Institute of Industrial Relations, Business Administration-Economics bldg., University of California, Los Angeles 24, Cal. $1.

The preface to this pamplet states: "Collective bargaining agreements covering railroad employees customarily specify a fair and impartial hearing incident to discharge or other discipline of an employee, and disputes involving such provisions generally come under jurisdiction of the National Railroad Adjustment Board. This is an agency established by 1934 amendments to the Railway Labor Act of 1926. Patterns of due process in the disciplinary procedure have found expression in the awards of the board, which, as a whole, may be considered as a form of industry-wide industrial jurisprudence or common law. The institute hopes that publication of the substance of these awards in a systematic framework will be of practical value to representatives of management and labor under the Railway Labor Act. It is noteworthy that this is the first publication which has analyzed and organized into a readily usable body of information the thousands of awards of the National Railroad Adjustment Board." The material is classified under nine headings: General aspects of fair and impartial hearing in discipline cases; placing charges and setting date of hearing; notice; the right of representation; the right to be present; the right to have evidence presented at the hearing; the right of cross-examination; the hearing; and appeals.

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THE ECONOMICS OF THE GUARANTEED WAGE. 36 pages. Economic Research department, Chamber of Commerce of the United States, Washington 6, D.C. Single copy, 50 cents; quantity discount.

This report is a revision of an earlier document by the same title. It analyzes the nature of the job security problem, and the possible impact of broadly expanded private wage guarantees, and sets forth a number of conclusions.

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IT SERVES YOU WELL. Bureau of Business Practice, 100 Garfield ave., New London, Conn. Sample copies available.

Every employee, no matter where he works—in shipping, in an office, in delivery, in a retail store, or at a bench or a machine—is a good will ambassador for his firm, workers are advised in this booklet, published for distribution by employers as a communications medium. There is a definite connection between a company's good will and the security its employees enjoy on the job, the leaflet advises, noting that most companies couldn't exist without good will every day in the year. "Sincere interest and pride in your job will result in improved products and services," the pamplet tells employees. "This in turn will create a greater consumer demand, which means increased security for you and your family. The amount of good will which you build up from day to day, both inside and outside your company, determines how far you and your company get ahead." Another reminder is that employees help themselves by spreading the good word about their firm to friends and neighbors.

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AUTOMOBILE FACTS AND FIGURES, 33rd EDITION, 1952. 80 pages. Automobile Manufacturers Association, New Center bldg., Detroit 2, Mich. Free.

The A.M.A.'s annual compilation of facts and figures about the automobile and motor carrier industries.

BROCHURE

STEELMAN OF THE FREE WORLD. 62 pages, illustrations. Inland Steel Company, 38 South Dearborn street, Chicago 3.

A "picture book" story about the role of steel in the free nations of the world, showing how steelmen live in France, Germany, Japan, Great Britain, the Saar and other countries. Combining in picture form a geography lesson, an economics lesson and a lesson in free government, the book has as its keynote figure an Inland steelman, Floyd Coapstick, of Hammond, Ind., who has worked at Inland's Indiana Harbor works for 13 years. Compiled from articles which originally appeared in Inland's company magazine, the series is now bound and is being sent to Inland's employees and to local libraries and schools. Theme of the booklet is started in the foreword, which says: "In these stories we have tried to show that despite the superficial differences of language and custom, these men have a great deal in common. All share a basic desire for unrestricted opportunity and personal freedom that is the strongest bond uniting free men against the encroachments of communism."

BOOKS

1953 CAR BUILDERS' CYCLOPEDIA OF AMERICAN PRACTICE, compiled and edited for the Association of American Railroads, Mechanical Division, by C. B. Peck. 1,280 pages, illustrations, drawings. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $12.

The 19th edition of this standard reference tool, first published in 1879, contains drawings and photographs of American railroad and industrial cars, their parts and equipment; cars built in America for export to foreign countries; descriptions and illustrations of shops and equipment employed in construction and repair of cars, and a dictionary of terms. Many new designs of cars and car parts have been introduced since the publication of the previous edition; details of these designs have been included so this edition may contain latest practices in American car construction and equipment.

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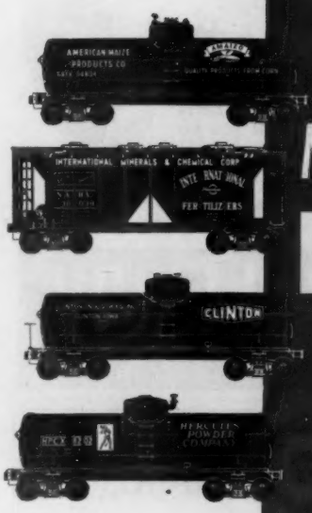
THE MAINSPRING OF HUMAN PROGRESS, by Henry G. Weaver. Revised edition, 279 pages. Foundation for Economic Education, Inc., Irvington-on-Hudson, N.Y. Paper covered, $1.50; clothbound, $2.50.

This book deals with the fundamental and ever-present issues of war, the purpose of government, economics, religion, and how to preserve independence in a society based on interdependence. It is dedicated to the principle that only free men can make effective use of their imaginations and creative abilities; that the purpose of government is to protect personal liberty.

PERIODICAL ARTICLE

NEW FLAT CAR PUTS TRUCK TRAILERS ON RAILS, produced by George Koether. Look, October 6, 1953. Cowles Magazines, Inc., Look bldg., Des Moines 4, Iowa. Single copies, 15 cents.

This "marriage of convenience" between truckers and railroads will have advantages for truckers, railroads and motorists, this article states, as it will save lives, money and highways—and tempers!



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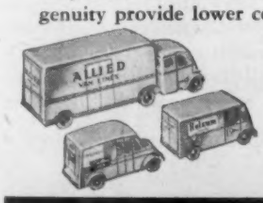

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• at the close of February, 1953, the *cash value* of Series E Bonds held by *individuals* reached a new high: $35.5 billion. This is $1 billion more than the value of the Bonds held on May 1, 1951, when E Bonds began to mature.

• to this encouraging reservoir of future purchasing power, 8,000,000 Payroll Savers are adding $160,000,000 per month by their consistent investment in U.S. Savings Bonds.

• unit sales of E Bonds in 1952 reached the highest level of the past six years—more than 77 million individual pieces. Of the 77 million units, 67 million were in the $25 and $50 denominations—the bonds bought chiefly by Payroll Savers.

• Payroll Savers are serious savers—of the approximately $6 billion Series E Bonds which had become due up to the end of March, $4.5 billion, or 75%, were retained by their owners beyond maturity.

If you are not among the 45,000 companies that make the benefits of the Payroll Savings Plan available to their employees . . . or if you do have a Plan and your employee participation is less than 50%, a telegram or letter to Savings Bond Division, U.S. Treasury Department, Washington Building, Washington, D. C., will bring you all the information and assistance needed to build a *good* Payroll Savings Plan.

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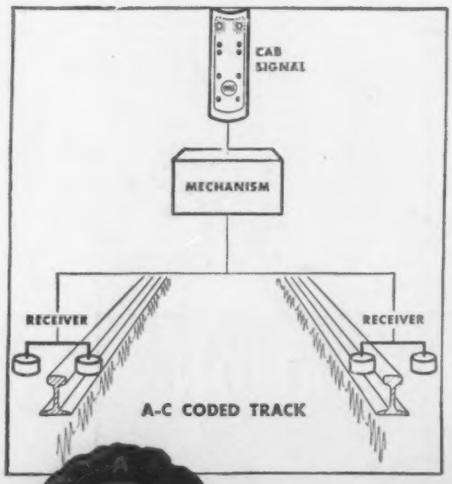

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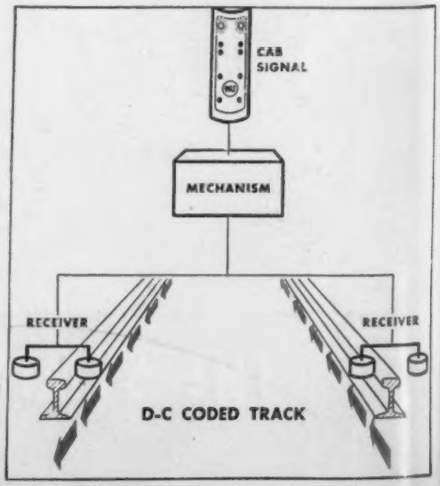

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